Hinweis

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Sicherheitshinweis – <u>Port Forwarding NICHT benutzen</u>

eQ-3 schätzt Port Forwarding allgemein als Sicherheitslücke ein und warnt bereits seit 2015 vor dessen Nutzung mit der CCU.

Sollten Sie Port Forwarding mit der CCU nutzen empfiehlt Ihnen eQ-3 dringend die Konfiguration zu ändern.

Alternativen sind unter anderem:

- Nutzung einer VPN Lösung, z.B. in Verbindung mit einem DSL / Kabel-Router (wie beispielsweise Fritz!Fernzugriff von AVM)
- Nutzung einer Fernzugangs-Lösung zur CCU, z.B. Cloudmatic von Easy Smarthome

Falls Sie hierzu weitere Fragen haben, kontaktieren Sie uns hierfür unter support@eq-3.de

Changelog

2.47.20

Fehlerbehebungen

[HMCCU-407]	Probleme bei Interprozesskommunikation nach Start des Homematic IP Dienstes behoben.

2.47.18

Fehlerbehebungen

[HMCCU-401]	Zugriff über WebUI EcmaScript Seiten (ESP) für unprivilegierte Benutzer weiter eingeschränkt. (behebt CVE-2019-14473)
[HMCCU-400]	Zugriff über WebUI ESP Seiten für unprivilegierte Benutzer weiter eingeschränkt. (behebt CVE-2019-14475)
[HMCCU-383]	Bei einem HTTP Redirect auf die login.htm wurde eine Session ID ohne vorherigen Login erzeugt (behebt CVE-2019-9583)
[HMCCU-382]	Directory Traversal / Arbitrary File Read behoben (CVE-2019-9726)
[HMCCU-381]	Möglichkeit einer Denial of Service Attacke auf Logikschicht der Zentrale (ReGaHss) von eingeloggten Benutzern behoben (CVE-2019-14474)

Erweiterungen / Verbesserungen

- Allgemeine Stabilitätsverbesserungen beim Homematic IP Dienst
- Robustheit der Homematic IP XML-RPC Schnittstelle gegenüber nicht mehr erreichbaren Clients wurde verbessert. Hierdurch konnte es zum Ausbleiben von Geräte Events kommen.

2.47.15

Fehlerbehebungen

[HMCCU-360]	Die Daten der Logikschicht wurden beim Abmelden nicht mehr gespeichert.
[HMCCU-357]	Funk-Schaltaktoren mit Leistungsmessung (HM-ES-PMSw1-Pl*) zeigten beim Energie-Zähler „NaN" anstatt des Messwertes an.
[HMCCU-354]	Bei dem HM-MOD-EM-8Bit Modul (Version 1.0) wurden die Kanalparameter des Kanal 3 in der Gerätekonfiguration nicht mehr dargestellt.

2.47.12

Fehlerbehebungen

[HMCCU-335]	Verbindungsprobleme der Version 2.47.10 mit Drittanbieter-Software behoben.
[HMCCU-334]	Fehler beim Hinzufügen von IP-Adressen für den eingeschränkten Zugriff im Firewall-Dialog behoben.
[HMCCU-333]	Die Duty-Cycle Anzeige gab u. U. einen Wert anderer Gateways aus.

2.47.10

Geräteintegration

[HMCCU-155]	Integration HmIP-MIO16-PCB
[HMCCU-152]	Integration HmIP-ASIR-2
[HMCCU-28]	Integration HmIP-FALMOT-C12

Fehlerbehebungen

[HMCCU-317]	Kanäle der virtuellen Fernbedienung (HmIP-RCV-50) ließen sich nicht aus Räumen und Gewerken löschen.
[HMCCU-296]	HmIP-MP3P - Bei einer Verknüpfung mit einem Windmesser wurde u. U. fälschlicherweise die Farbauswahl anstatt der Soundauswahl angeboten.
[HMCCU-294]	Die Beschriftung des Buttons „Geräte-Firmware" auf der Seite „Einstellungen" wurde in „Geräte-Firmware-Übersicht" korrigiert.
[HMCCU-285]	Verhindern von Remote-HTML-Injections bei der Abfrage von Addon-Versionsnummern.
[HMCCU-274]	Unter bestimmten Voraussetzungen konnte eine SessionID ohne Login erzeugt werden.
[HMCCU-273]	Die angezeigte Regenmenge für den HmIP-SWO-* verdoppelte sich nach einem Neustart der CCU.

Erweiterungen / Verbesserungen

[HMCCU-261]	JSON-API: Berechtigungslevel für Zugriff auf get-/setMetadata Aufrufe eingeführt: setMetadata Aufrufe: ADMIN getMetadata Aufrufe GUEST
[HMCCU-260]	Ergänzung der HTTP-Header des lighttpd Web Servers um einige sicherheitsrelevante Felder
[HMCCU-259]	HmIP-MP3P - Dialog zur einfachen Verwendung von Playlisten innerhalb von Programmen hinzugefügt.
[HMCCU-252]	Web Server der CCU schicken HTTP-Header „Server" nicht mehr mit.
[HMCCU-248]	Bei Direktverknüpfungen zwischen Bewegungsmeldern und Schalt-/Dimmaktoren schaltet sich ein helligkeitsabhängig geschalteter Aktor nicht mehr ungewollt selbstständig aus, obwohl noch Bewegung detektiert wird.
[HMCCU-213]	HM-ES-TX-WM - Geändertes Verhalten mit der demnächst erhältlichen Firmware >= 2.x.y Integration SML-Protokoll, neuer Konfigurationsparameter „DZG-Kompatibilitätsmodus". Die Unterstützung von IR-, Gas- und LED-Sensoren wurde entfernt. Es wird ausschließlich der ES-IEC Sensor unterstützt.

[HMCCU-163]	Neue Funktionalität für HmIP-MIOB (Wochenprogramm)
[HMCCU-162]	Neue Funktionalität für HmIP-FAL (MIOB-Umschaltung Heizen/Kühlen)
[HMCCU-150]	Automatische Übertragung der Standortdaten an neu angelernte HmIP-Geräte. Bei Änderung der Standortdaten besteht nun die Möglichkeit der Übertragung an alle dem System bekannten HmIP-Geräte.

2.45.7

Fehlerbehebungen

[HMCCU-247]	Zur CCU 2 inkompatible Einstellungsmöglichkeiten in den Firewall Einstellungen wurden entfernt. Eine dieser inkompatiblen Einstellungsmöglichkeiten konnte dazu führen, dass der Zugriff auf die CCU 2 gesperrt wird.

2.45.6

Geräteintegration

[HMCCU-1834]	Integration HmIP-FCI6 (Homematic IP Kontakt-Schnittstelle Unterputz – 6-fach)
[HMCCU-1375]	Integration HmIP-WT (Homematic IP Wandthermostat)
[HMCCU-130]	Integration HmIP-WRCD (Homematic IP Wandtaster mit Statusdisplay)
[HMCCU-24]	Integration HmIP-ASIR-B1
[HMCCU-20]	Integration HmIP-ASIR-O (Homematic IP Alarmsirene – außen)
[HMCCU-15]	Integration HmIP-SCI (Homematic IP Kontakt-Schnittstelle)
[HMCCU-9]	Integration Hm-RC-2-PBU-FM-2 (Funk-Sender 2-fach für Markenschalter, Unterputzmontage)
[HMCCU-6]	Integration HmIP-RCV-50 (virtuelle Fernbedienung für HmIP)

Erweiterungen / Verbesserungen

[HMCCU-2116]	Konfigurationsparameter „Optimum Start/Stopp" für HmIP-WT/WTH/WTH2 hinzugefügt.
[HMCCU-2115]	Konfigurationsparameter „Ventil-Offset" für HmIP-eTRV/-2/-B/-C hinzugefügt.
[HMCCU-1926]	IP-Adressen (IPv4) unter Netzwerkeinstellungen werden auf Plausibilität geprüft.
[HMCCU-194]	HmIP-eTRV/eTRV-2/eTRV-C - Innerhalb von Programmen kann nun auf den Ventilstatus reagiert werden.
[HMCCU-109]	Bezeichnung Relais in Ausgang geändert (z. B. „Statusmitteilung Relais" ist nun „Statusmitteilung Ausgang")
[HMCCU-100]	HmIP-eTRV/eTRV-2/eTRV-C - mit der aktuellsten Firmware dieser Geräte steht nun ein Kanalparameter zur Einstellung des Ultra-Leise-Betriebs zur Verfügung.
[HMCCU-74]	Der Button Geräte-Firmware springt nun zur neuen Übersichtsseite der Geräteliste.
[HMCCU-8]	Das Gerätefirmwareupdate wird nur noch über die „Geräte-Firmware Übersicht" durchgeführt. Der entsprechende Button auf der Gerätekonfigurationsseite wurde entfernt.

Fehlerbehebungen

[HMCCU-2114]	HmIP-BSL - die obere Gerätetaste stand u. U. für Programme nicht zur Verfügung.
[HMCCU-2104]	HmIP-FBL/BBL - fehlende Lamellenposition im Wochenprogramm hinzugefügt.
[HMCCU-2103]	HmIP-FBL/BBL - die Lamellenposition ließ sich nicht über die WebUI setzen.
[HMCCU-2095]	Das Konfigurationsfenster des RGBW-Controller in Programmen wiederhergestellt.
[HMCCU-2093]	HmIP-FCI1 - fehlende Easymodes hinzugefügt.
[HMCCU-2088]	Die Funktion „Aktion bei Spannungszufuhr" für Homematic IP-MP3P und Dimmaktoren war fehlerhaft.
[HMCCU-2087]	HmIP-FCI1 - Parameter „Eventverzögerung" entfernt.
[HMCCU-1837]	Die „Geräte-Firmware Übersicht" wurde bei vorhandenem Philips HUE Gateway nicht korrekt geladen.
[HMCCU-1467]	Der CCU-Wert des Energiezählers verdoppelte sich nach einem Reboot der CCU.

[HMCCU-186]	HmIP-BSL - Der Schaltzustand konnte im Wochenprogramm nicht verwendet werden.
[HMCCU-137]	Die Ein-/Ausschaltdauer innerhalb von Easymode-Profilen kann nun nicht mehr gleichzeitig auf ‚Nicht aktiv' gesetzt werden.
[HMCCU-136]	Der Gerätefilter der Gerätliste lieferte bei den Einstellungen „BidCos-RF/Wired" kein Resultat.
[HMCCU-97]	HmIP-PCBS2 – Wohnort (Längen-/Breitengrad) ist jetzt einstellbar. Die Angabe wird für eine korrekte Ausführung des Wochenprogramms benötigt.

2.41.9
Fehlerbehebungen

[HMCCU-179]   Buffer Overflow im ReGa Web Server

Im ReGa Web Server gibt es eine Pufferüberlauf- / Buffer Overflow Schwachstelle. Bei dieser können in einen Datenbereich (Array) mit fester Größe im Stack Daten beliebiger Länge geschrieben. Durch „bösartiges" Schreiben von Daten, ist es prinzipiell möglich, die Rücksprungadresse im Stack zu überschreiben und den Rücksprung in den Bereich der geschriebenen Daten zu lenken. Hierdurch könnte Schadcode ausgeführt werden.
Aktuell ist jedoch kein Exploit bekannt, der dies für einen Angriff auf die CCU ausnutzt.
Der Webserver-Prozess kann aber zum Absturz gebracht werden.
Die Schwachstelle des Pufferüberlauf- / Buffer Overflow wurde geschlossen. Damit kann hier kein Schadcode mehr eingeschleust werden.

[HMCCU-143]   Schreiben beliebiger Daten
Unter bestimmten Umständen war das Schreiben beliebiger Daten möglich.
Hier wurde ein Fehler in einem Script für die Administration behoben.

Risiko: Folgende Angriffsmöglichkeiten bestanden zuvor bei diesen Fehlern
- aus dem Internet: Wenn Port Forwarding eingerichtet war (siehe Warnung oben)
- aus dem LAN: Wenn unsichere / nicht vertrauenswürdige Systeme Zugang zum LAN haben

2.41.8
Fehlerbehebungen

[HMCCU-153]   Unberechtigtes Login durch Manipulation mit der SessionID
(Security Update des Web Session Managements der CCU)

Durch das Aufrufen der WebUI wird bereits vor dem Login eines Benutzers eine Sitzung / SessionID erzeugt. Diese kann für weiterführende Angriffe missbraucht werden. In der Problembehebung wird die Erzeugung einer Sitzung / SessionID ohne vorherigen Login verhindert

[HMCCU-154]   Authentication Bypass durch User „RemoteAPI"

Über einen in der Logikschicht der CCU existierenden internen Benutzer „RemoteAPI" kann eine gültige Sitzung / SessionID erzeugt werden, die die Basis für weiterführende Angriffsszenarien darstellt. Die Erzeugung einer Session für den internen Benutzer wird jetzt unterbunden.

[HMCCU-154]   Fehler im Session Handling

Beim Ausloggen / Abmelden eines Benutzers aus der CCU WebUI wird die Sitzung / SessionID durch ReGa in bestimmten Situationen nicht sofort invalidiert. Dadurch kann die SessionID unter diesen Umständen zeitweilig für einige Aufrufe weiter verwendet werden. Die SessionID wird jetzt sofort beim Abmelden eines Benutzers invalidiert. Eine weitere Verwendung ist damit nicht mehr möglich.

Risiko: Folgende Angriffsmöglichkeiten bestanden zuvor bei diesen Fehlern
- aus dem Internet: Wenn Port Forwarding eingerichtet war (siehe Warnung oben)
- aus dem LAN: Wenn unsichere / nicht vertrauenswürdige Systeme Zugang zum LAN haben

2.41.5

Neue Geräte
[HMCCU2-1860]   Integration HmIP-RCB1 (Homematic IP Fernbedienung mit Montagegurt – 1-Kanal, ELV-Bausatz)
[HMCCU2-1802]   Integration HmIP-MOD-TM (Tormatic Torantrieb)
[HMCCU2-1750]   Integration HmIP-FCI1 (Homematic IP Kontakt-Schnittstelle Unterputz – 1-fach)
[HMCCU2-1718]   Integration HmIP-eTRV-C (Homematic IP Heizkörperthermostat – kompakt)
[HMCCU2-1383]   Integration HmIP-MP3P (Homematic IP MP3 Kombisignalgeber, ELV-Bausatz)

Fehlerbehebungen
[HMCCU2-1648]   HmIP-PSM: In Direktverknüpfungen steht der Entscheidungswert des Kanal 7 jetzt zur Verfügung. Beim Kanal 6 (Messwertkanal) kann der Mindestsendeabstand auf über 30 Sekunden eingestellt werden.

Erweiterungen / Verbesserungen
- Erweiterte Kompatibilitätsprüfungen beim Einspielen von Backups. ACHTUNG: Das Einspielen eines Backups wird deutlich länger dauern.
- Änderungen an den Logikschicht-Varianten:
  o Die Version „Community" heißt jetzt „Standard (Default).
  o Die Version „Standard" heißt jetzt „Kompatibilitätsmodus".
  o Die Version „Legacy" wurde entfernt.

2.35.16

Fehlerbehebungen
[HMCCU2-1817]   Bei den HmIP-Jalousie-/Rollladenaktoren wurden unter bestimmten Umständen die Controls der virtuellen Kanäle auf der Seite „Status und Bedienung" nicht angezeigt.

2.35.15

Neue Geräte
[HMCCU2-1625]   Integration HmIP-SWD (Homematic IP Wassersensor)
[HMCCU2-1450]   Integration HmIP-BRC2 (Homematic IP Wandtaster für Markenschalter – 2-fach)
[HMCCU2-1444]   Integration HmIP-SLO (Homematic IP Lichtsensor – außen)
[HMCCU2-1373]   Integration HmIP-BSL (Homematic IP Schaltaktor für Markenschalter – mit Signalleuchte)

Erweiterungen / Verbesserungen
[HMCCU2-1744]   Übersichtsseite zu Geräte-Firmwareupdates ergänzt.
[HMCCU2-1734]   Der Fenster-Drehgriffkontakt Hm-Sec-RHS-2 ist nun auch in Gruppen verwendbar.
[HMCCU2-1567]   Beim Ablernen eines HmIP-Eventlisteners erscheint beim Ablernen des Gerätes nun ein Hinweis, dass die Systemtaste betätigt werden muss.
[HMCCU2-1554]   HmIP-Heizgruppenfunktion hinzugefügt.

[HMCCU2-1521]	Für Dimmer- u. Rolladenaktoren können nun Rampen in Programmen als Bedingung abgefragt werden.
[HMCCU2-1465]	Für viele Sensoren ist es nun möglich, innerhalb von Programmen als Bedingung auf definierte Spezialwerte (z. B. Über-/Unterlauf) zu triggern.
[HMCCU2-1457]	Der Roto Fensterkontakt ZEL STG RM FFK ist nun auch in Gruppen verwendbar.

Fehlerbehebungen

[HMCCU2-1733]	Bei aktivierter vereinfachter Ansicht wurde der Konfigurationsparameter "Aktion bei Spannungszufuhr" bei BROLL/FROLL nicht übernommen.
[HMCCU2-1726]	Beim Tür-/Fensterkontakt HmIP-SWDO-I waren die Einstellungen des Konfigurationsparameter "Meldung in Position geöffnet/geschlossen" vertauscht.
[HMCCU2-1724]	Sicherheitslücke in der Funktion session_logout behoben.
[HMCCU2-1721]	Beim Erstellen einer Systemvariable vom Typ Werteliste konnte diese nicht mehr bearbeitet werden, wenn in der Wertebezeichnung ein Steuerzeichen (z. B. Druck der ENTER-Taste) vorkam. Steuerzeichen in der Wertebezeichnung werden nun durch ein Semikolon ersetzt.
[HMCCU2-1716]	HM-TFK (Homematic Fensterkontakt) - Fehlende Übersetzung des Konfigurationsparameter "EVENT_DELAYTIM" hinzugefügt.
[HMCCU2-1715]	Der Gerätetyp VIR-LG-ONOFF wird nun korrekt als Schalt-, und nicht mehr als Dimmaktor ausgegeben.
[HMCCU2-1714]	Problem des HmIP-SPDR (Durchgangssensor) bei Verwendung des Easymodes als Durchgangs-Zähler behoben. Das Profil "rechts > links aus / links > rechts ein funktionierte nicht korrekt.
[HMCCU2-1713]	Bei Jalousieaktoren mit Lamellensteuerung wurde die Lamellenverstellzeit u. U. nicht korrekt übernommen.
[HMCCU2-1648]	HmIP-PSM - Der Konfigurationsparameter "Mindestsendeabstand" des Kanals 6 wurde bei Werten > 30 Sekunden fälschlicherweise auf 100 ms gesetzt.
[HMCCU2-1626]	Fehler in der Sommer-/Winterzeitumstellung behoben.
[HMCCU2-1609]	Bei aktivierter vereinfachter Ansicht fuhren BROLL/BBL/FBL/FROLL unter bestimmten Umständen eine unerwartete Position an.
[HMCCU2-1343]	Bei Nutzung von https konnten bisher nicht die auf dem Update-Server zur Verfügung stehenden Gerätefirmwareversionen und die aktuell zur Verfügung stehende CCU-Firmwareversion ermittelt werden.

Sonstige Änderungen

[HMCCU2-1741]	Das veraltete Logo der CCU wurde durch das aktuelle Logo ersetzt. Die Links der Hilfe-Seite wurden angepasst.
[HMCCU2-1720]	HmIP-SPDR - Die Konfigurationsparameter "Gesendeter Entscheidungswert" der Kanäle 2,3 u. 4 sind nun Expertenparameter.
[HMCCU2-1719]	Die vorgegebenen Positionsdaten für die Stadt Wien wurden auf 48.2°N und 16.3°O geändert (war 47°N, 7.4°O).
[HMCCU2-1656]	Bei den HmIP-Messaktoren wurde der Konfigurationsparameter "Messwertbildung" des Messwert-Kanals von 255s auf 16s geändert.
[HMCCU2-1522]	Beim Anlegen neuer Schaltzeitpunkte in den Wochenprogrammen entsprechender HmIP-Geräte, werden alle Zielkanäle nun standardmäßig aktiviert.

2.31.25

Fehlerbehebungen

| [HMCCU2-1636] | Falsche Kanalzuordnung eines Konfigurationsparameters des HmIP-BSM behoben. |
| [HMCCU2-1635] | Fehlende Optionen innerhalb von Programmen (VALVE_STATE, Systemvariablen) korrigiert. |

Sonstige Änderungen

[HMCCU2-1639]   Logmeldung des groupdevice.service von info auf debug geändert.

2.31.23

Neue Geräte

[HMCCU2-1620]   Integration Philips Hue (Ab Philips Hue Bridge 2.0)

[HMCCU2-1443]   Integration HmIP-PMFS (Homematic IP Netzausfallüberwachung (ELV-Bausatz))

[HMCCU2-1381]   Integration HmIP-WHS2 (Homematic IP Schaltaktor für Heizungsanlagen – 2-fach)

[HMCCU2-1380]   Integration HmIP-SMI55 (Homematic IP Bewegungsmelder für 55er Rahmen – innen)

[HMCCU2-1378]   Integration HmIP-SWO-x (Homematic IP Wettersensoren – basic/plus/pro)

[HMCCU2-1371]   Integration HmIP-MOD-RC8 (Homematic IP Modulplatine Sender – 8-fach (ELV-Bausatz))

[HMCCU2-1359]   Integration HmIP-STHO (Homematic IP Temperatur- und Luftfeuchtigkeitssensor – außen)

[HMCCU2-1352]   Integration HmIP-WGC (Homematic IP Garagentortaster)

[HMCCU2-1351]   Integration HmIP-SPDR (Homematic IP Durchgangssensor mit Richtungserkennung)

Fehlerbehebungen

[HMCCU2-1626]   Fehler bei Zeitumstellung in der Logikschicht behoben.

[HMCCU2-1530]   In einer Heizungsgruppe gemachte Einstellungen wurden korrekt an die Geräte übertragen, das virtuelle Gerät der Heizungsgruppe zeigte nach Neuaufruf allerdings wieder die Default-Einstellung.

[HMCCU2-1485]   HmIP-BBL/BROLL/FBL/FROLL – Im Bedienelement unter Status & Bedienung wurde unter Umständen eine falsche Behanghöhe angezeigt.

[HMCCU2-1478]   Bei einer direkten Verknüpfung zwischen einem Homematic Rauchwarnmelder und einem Rollladenaktoren fuhr der Aktor unter Umständen nicht hoch.

[HMCCU2-1477]   Fehlerhafte Quick-Veto Berechnung korrigiert.

[HMCCU2-1475]   Einige Kanalparameter bestimmter Dimmer konnten nur geändert werden, wenn die Experteneinstellungen aktiviert waren.

[HMCCU2-1434]   Nach Hochladen einer Geräte-Firmwaredatei, wurde unter Favoriten angegeben, dass die Firmwaredatei fehlerhaft ist.

Erweiterungen / Verbesserungen

[HMCCU2-1551]   Bei Jalousieaktoren mit Lamellenverstellung wird bei Betätigung der Auf/Ab-Tasten des nicht mehr die letzte Lamellenposition angefahren.

[HMCCU2-1547]	Bei den Geräten HmIP-BBL/-BROLL wird die automatische Kalibrierfahrt sowie die automatische Kompensation der Motoreinschaltverzögerung nur angeboten, wenn der Kanalparameter „Automatische Erkennung der Endposition" aktiv ist.
[HMCCU2-1523]	Ein HmIP-SPI kann nun unter Status & Bedienung und in Programmen deaktiviert werden.
[HMCCU2-1519]	HmIP-SMO - Grenzwert für bedingtes Senden korrigiert.
[HMCCU2-1516]	Geräte-Posteingang überarbeitet. Die Geräteübernahme ist nun erst nach Überprüfung aller Kanäle möglich.
[HMCCU2-1503]	Der Bootvorgang des HM-Server wurde optimiert.
[HMCCU2-1474]	Der Anlerndialog zeigt nun nur noch die Bereiche laufender Interfaces.
[HMCCU2-1473]	HmIP-SMO/SMI/SPI erhalten zukünftig einen neuen Kanal, der es ermöglicht die Bewegungserkennung für einen gewünschten Zeitraum zu unterdrücken. Damit der Kanal zur Verfügung steht, muss das Gerät mit der neuesten Firmware versehen werden, sowie ab- und wieder neu angelernt werden.

Sonstige Änderungen

API-Change – Der Methode User.getLanguage() wird nun nicht mehr der Username übergeben, sonder die User-ID.

Die Logikschicht der ReGaHss Community Version wurde aktualisiert.

Known Bugs

Die schaltbaren Steckdosen von OSRAM-Lightify und Philips Hue werden als Dimmaktoren behandelt. Damit ist das Schalten dieser Geräte per WebUI nur eingeschränkt möglich.

2.29.23
Erweiterungen

[HMCCU2-1488]	Performanceverbesserung bei der Übertragung von Kanalparametern
[HMCCU2-1487]	Dem Anwender wird nun beim Start der CCU2 **einmalig** ein Sicherheitshinweis angezeigt, welcher u. a. auf die Risiken des Port Forwardings aufmerksam macht.

Fehlerbehebungen

[HMCCU2-1485]	Bei den Homematic IP Jalousie- und Rollladenaktoren (HmIP-BBL/BROLL/FBL/FROLL) war es dem Anwender unter Umständen nicht möglich die genaue Behanghöhe zu erkennen.
[HMCCU2-1476]	Das Logging der HS485-Schnittstelle wechselte nach einem Neustart der Zentrale immer auf „Nur Fehler", auch wenn etwas anderes eingestellt war.
[HMCCU2-1361]	Programme wurden unter Umständen erst ausgeführt, wenn die Bedingung einmal manuell betätigt wurde.

2.29.22
Fehlerbehebungen

[HMCCU2-1468]	Die Kanalparamter für Kanal 4 des BBL/FBL wurden nicht übernommen,

wenn die Einstellung „Modus vereinfachte Verknüpfungskonfiguration aktivieren"
aktiviert ist.

[HMCCU2-1459]   Der Status einer Gruppe ohne Wandthermostat wurde nicht aktualisiert.
                 Dieser Fehler wurde behoben.

[HMCCU2-1458]   Fehler beim Aufruf der Kanalparameter des Hm-Sen-RD-O behoben

[HMCCU2-1456]   Beim HM-LC-Ja1PBU-FM konnten unter bestimmten Umständen einmal
                 geschlossene Lamellen nicht wieder geöffnet werden. Dieser Fehler wurde
                 behoben.

2.29.19

Fehlerbehebungen

[HMCCU2-1458]   Fehler beim Aufruf der Kanalparameter des Hm-Sen-RD-O behoben

[HMCCU2-1456]   Beim HM-LC-Ja1PBU-FM konnten unter bestimmten Umständen einmal
                 geschlossene Lamellen nicht wieder geöffnet werden. Dieser Fehler wurde
                 behoben.
[HMCCU-1459]   In der WebUI wird bei Heizgruppen ohne Wandthermostat keine Statusaktualisierung
                 vorgenommen. Dieser Fehler wurde behoben.

2.29.18

Neue Geräte

[HMCCU2-1368]   Integration HmIP-PDT-UK (Dimmer-Steckdose – Phasenabschnitt (UK-Version))

[HMCCU2-1367]   Integration HmIP-eTRV-UK (Heizkörperthermostat (UK-Version))

[HMCCU2-1350]   Integration HmIP-SPI (Präsenzmelder – innen)

[HMCCU2-1349]   Integration HmIP-BBL (Jalousieaktor für Markenschalter)

[HMCCU2-1348]   Integration HmIP-FBL (Jalousieaktor für Unterputzmontage)

[HMCCU2-1347]   Integration HmIP-BROLL (Rollladenaktor für Markenschalter)

[HMCCU2-1346]   Integration HmIP-FROLL (Rollladenaktor für Unterputzmontage)

[HMCCU2-1345]   Integration HmIP-MOD-OC8 (Schaltaktor mit Open Collector-Ausgang)

[HMCCU2-1301]   Integration HmIP-SWDO-I (Fenster- und Türkontakt – verdeckten Einbau)

[HMCCU2-1274]   Integration HmIP-BWTH / BWTH24 (Wandthermostat mit Schaltausgang)

[HMCCU2-1250]   Integration HmIP-PCBS-BAT (Schaltplatine für Batteriebetrieb)

[HMCCU2-1206]   Integration HmIP-SAM (Beschleunigungssensor)

[HMCCU2-1043]   Integration HM-LC-DW-WM (Dual-White-LED Controller)

Erweiterungen / Verbesserungen / Änderungen

[HMCCU2-1452]   Port 8182 des Web-Proxies nach 8183 geändert. Port 8182 wird zur Ansteuerung

der INFO-LED bei Service-Meldungen benutzt.

[HMCCU2-1393]   Hilfe für die Konfigurations-Parameter „Gerät dient als Router" und „Routing aktiv" hinzugefügt.

[HMCCU2-1390]   In der Logikschicht (ReGa) wurden Fehler behoben und Erweiterungen eingebaut (z.B. Mathematische Funktionen, siehe HM-Skript_Teil_1_Sprachbeschreibung_V2.0).
Es gibt verschiedene Versionen, die sich wie folgt unterscheiden und unter dem Punkt „Systemsteuerung/Zentralenwartung/Logikschicht-Version" umgeschaltet werden können:

Standard:
Diese Version enthält Fehlerbehebungen im Zeitmodul und neue Funktionen, um z. B. mathematische Operationen in Skripten nutzen zu können.

Community:
Diese Version bietet zusätzliche Verbesserungen zur Fehlerbehebung in Skripten. Bitte beachten, dass diese Version unter Umständen zu Abbrüchen von Skripten führen kann.

Legacy:
Sollten seit dem Update auf die Version 2.29.18 der CCU2-Software Probleme auftreten, können Sie mit der Auswahl „Legacy" auf die Vorgängerversion der Logikschichtversion wechseln.

[HMCCU2-1360]   Easymode Profil "Position anfahren" auch für die internen Tasten der Homematic Rollladenaktoren

[HMCCU2-1357]   Neue Gerätefirmware für HmIP-Geräte wird nun auf der Startseite angezeigt.

[HMCCU2-1355]   Wochenprogramm für HmIP-Geräte mit entsprechender Firmware

[HMCCU2-1300]   HmIP-eTRV – Parameter „Fehler-Position" als Konfigurationsparameter hinzugefügt. (Gibt an, welche Position im Fehlerfalle angefahren werden soll.)

Fehlerbehebungen

[HMCCU2-1356]   Nach Verwendung des Zeichens \ (Backslash) innerhalb von Variablennamen oder der Variablenbeschreibung, konnte die Seite Einstellungen/Systemvariable nicht mehr aufgerufen werden. Der Backslash wird nun nicht mehr als gültiges Zeichen akzeptiert und wird herausgefiltert.

[HMCCU2-1309]   Die Info-LED der CCU2 reagiert nun auf Service-Meldungen, die durch HmIP-Geräte ausgelöst werden.

Allgemeine Hinweise
Java Version von 7 auf 8 (Compact 3 Profile + Erweiterungen) geändert.

Known Bugs
HmIP-MOD-OC8:
Unter Status/Bedienung wird beim Wochenprogramm (Kanal 41) nur der Status der ersten 8 Kanäle korrekt angezeigt. Das Problem wird mit einem der nächsten Releases der CCU2-Software behoben.

Das Ein-/Ausschalten der Präsenzerkennung wird nicht korrekt an die CCU2 zurückgemeldet. Der Status des Kanals wird in diesem Falle verzögert dargestellt. Dieses Problem wird mit einem Geräte-Firmware-Update in naher Zukunft behoben.

2.27.8
Fehlerbehebungen

[HMCCU2-1342]	Unter bestimmten Umständen wurden OSRAM-Lightify-Geräte doppelt angezeigt. Dieser Fehler wurde behoben.
[HMCCU2-1339]	Fehler beim Aufrufen direkter Verknüpfungen behoben.
[HMCCU2-1338]	Die Controls zur Anzeige bestimmter Parameter wurden nur noch einzeilig dargestellt. Dadurch war der Wert bei langen Parameternamen nicht mehr lesbar.
[HMCCU2-1337]	HmIP-STH/STHD – Zugriff auf die Konfigurationsparameter wieder ermöglicht.

2.27.7
Neue Geräte

[HMCCU2-1260]	Integration Hm-Sen-MDIR-O-3 (Homematic Funk-Bewegungsmelder, außen)
[HMCCU2-1191]	Integration HmIP-FDT (Homematic IP Dimmaktor Unterputz – Phasenabschnitt)
[HMCCU2-1173]	Integration HmIP-PCBS (Homematic IP Schaltplatine)

Erweiterungen / Verbesserungen

Neben allgemeinen Stabilitätsverbesserungen gibt es folgende Änderungen:

[HMCCU2-1336]	Sicherheitsrelevante Erweiterungen: - Firewall bei Systemstart starten - Directory Traversal Schwachstelle behoben - SSH Daemon erlaubt nur noch sichere Cipher und MACs - Weitere Ports in der firewall.conf eingetragen - Sicherheitslücke beim Prüfen auf gültige Session-ID behoben
[HMCCU2-1335]	Konfigurationsparameter „Soft On/Off" für dimmbare OSRAM-Lightify hinzugefügt. Hinweis: Damit dieser Parameter zur Verfügung steht, müssen diese Geräte aus dem System gelöscht und neu hinzugefügt werden (erneutes Suchen von Geräten).
[HMCCU2-1334]	Unterstützung für OSRAM-Lightify Plug hinzugefügt.
[HMCCU2-1333]	Unterstützung für OSRAM-Lightify Gardensport Mini RGB hinzugefügt.
[HMCCU2-1330]	Manuelle Eingabe einer OSRAM-Lightify Gateway-IP ermöglicht.
[HMCCU2-1328]	Direkte Werteingabe der RGB-Werte im Lightify-Farbauswahldialog ermöglicht.
[HMCCU2-1292]	OSRAM Kopplung um Steuerung von Gruppen erweitert.
[HMCCU2-1323]	Parameter Luftdruck für entsprechende Geräte (z. B. WDC7000) in Diagrammen nutzbar.

[HMCCU2-1302]   Für neue HmIP Thermostat-Versionen wurde ein Konfigurationsparameter ein-
                  geführt, der es ermöglicht, die Schaltzeitpunkte der Wochenprogramme im
                  Auto-Modus für eine wählbare Zeit (max. 12 Std.) nicht zu berücksichtigen.

[HMCCU2-1282]   Integration HmIP-FAL-X ab Firmwareversion 1.5 (Unterscheidung des Wärmebedarfs für
                  Kessel- oder Pumpensteuerung). Bei der Aktualisierung der FAL
                  auf diese Firmwareversion, muss das Gerät einmal ab- und wieder angelernt werden.

[HMCCU2-1281]   Dynamische Routing-Funktionalität für den HmIP-PS/PSM ab Firmwareversion 2.x

[HMCCU2-1242]   HmIP – Die Eingabefelder für KEY und SGTIN wurden getauscht und so den Angaben
                  auf den Gerätestickern angepasst

[HMCCU2-1218]   Der Jalousieaktor HM-LC-Ja1PBU-FM wird beim Anlernen direkt dem Gewerk
                  Licht zugeordnet.

[HMCCU2-1111]   In den Benutzereinstellungen kann gewählt werden, ob die Servicemeldung
                  „Gerätekommunikation war gestört" automatisch bestätigt wird. Diese Einstellung
                  steht nur als Administrator zur Verfügung.

[HMCCU2-1048]   HM-Sec-SIR-WM – Beim Erstellen einer direkten Verknüpfung unterscheidet die
                  Link-Beschreibung nun zwischen internem und externem Alarm.

[HMCCU2-820]   Unter dem Punkt „Systemsteuerung/Netzwerkeinstellungen" gibt es die
                  Möglichkeit, ein vom Benutzer aufgespieltes Zertifikat wieder zu löschen, ohne
                  sich per SSH Zugang auf die Zentrale verschaffen zu müssen. Der entsprechende
                  Button wird nur angezeigt, wenn auch tatsächlich ein Zertifikat vorhanden ist.

Fehlerbehebungen

[HMCCU2-1322]   HmIP-MIOB – Die Einheit des Levels für den analogen Ausgang (Kanal 11) innerhalb
                  von Programmen wurde auf % gesetzt. Dadurch ist der zulässige Wertebereich statt von
                  0.0 -1.0 auf 0 – 100% festgelegt. Damit die Änderung wirksam wird, muss das Gerät
                  einmal ab- und wieder angelernt werden.

[HMCCU2-1317]   Unterbindung direkter Verknüpfungen mit der internen Taste von HmIP-PS/PSM/PDT

[HMCCU2-1314]   Filtern nach Interface/Kategorie HmIP in der Geräteliste ergänzt.
[HMCCU2-1297]   HM-MOD-EM-8Bit – Die Nummerierung der Modusauswahl des Parameters
                  „Datenübertragungsbedingungen" wurde von 0 – 6 nach 1 – 7 geändert.

[HMCCU2-1293]   HmIP-BDT (u. a.) fehlerhafte Auswertung der Pegelbegrenzung und der Einschaltdauer bei
                  langem Tastendruck behoben.

[HMCCU2-1291]   Link zur Hilfe zum Löschen des Browser-Caches angepasst.

[HMCCU2-1259]   Die Bearbeitung direkter Verknüpfungen zwischen virtuellen Tasten und
                  Rollladenaktoren ergänzt

[HMCCU2-1227]   RFD beendete sich aufgrund von Speicherproblemen, wenn die Log-Datei des
                  HM-Servers zu groß wurde.

[HMCCU2-1226]   HmIP – Hinweis auf vorhandene Programme und Verknüpfungen beim Löschen von HmIP-Geräten ergänzt.

[HMCCU2-897]   Unter Umständen kam es vor, dass die Bedienelemente einiger Dialoge (z. B. Zusatzsoftware) nicht mehr erreichbar waren, da sie außerhalb des Screens lagen. Diese Dialoge können nun einfach mit der Maus verschoben werden, so dass die Bedienelemente wieder zugänglich sind.

[HMCCU2-700]   Testbutton für Rauchmelder-Teams entfernt.

2.25.15
Fehlerbehebungen
[HMCCU2-1257]   Problem bei Verwendung von Systemvariablen innerhalb von Programmen behoben.

[HMCCU2-1256]   Ein gewähltes Profil für einen Rolladenaktor wurde unter Umständen überschrieben.

2.25.14
Fehlerbehebungen
[HMCCU2-1255]   HmIP - Nutzung von Kanälen des Types KEY_TRANSMITTER (Fernbedienungen) innerhalb des Wenn-Zweiges ermöglichen.

[HMCCU2-1254]   HmIP-ASIR - Ausblenden des Kanals 1, da hier keine Funktion

[HMCCU2-1253]   Fehler beim Rückspielen eines CCU2-Backups behoben.

2.25.12
Erweiterungen / Verbesserungen
[HMCCU2-1230]   Integration OSRAM-Lightify

[HMCCU2-1190]   WTH mit Fw >= 1.6 verhält sich nun wie ein WTH-2 (anlernen an HmIP-FALXXX möglich)

[HMCCU2-1174]   Integration HmIP-PDT

[HMCCU2-1170]   Integration PSM für PE, UK, IT, CH

[HMCCU2-1163]   Integration HmIP-STH
                  Integration HmIP-STHD

[HMCCU2-1147]   Integration HM-LC-Ja1PBU-FM (Jalousieaktor mit Lamellensteuerung)

[HMCCU2-1140]   Anzeige des Endes des Urlaubsmodus für HmIP eTRV, eTRV2, WTH u. WTH-2

[HMCCU2-1115]   Integration HM-Sec-RHS-2 (Funk-Fenster-Drehgriffkontakt)

[HMCCU2-1104]   Integration Hm-MOD-EM-8Bit (8-Bit Funk-Sendemodul)

[HMCCU2-1042]   Integration HM-LC-Dim1T-DR

[HMCCU2-1026]   Integrtion HmIP-MIOB

[HMCCU2-1022]   Integration HmIP-FAL (FAL-24-6, FAL-24-10, FAL-230-6, FAL-230-10)

[HMCCU2-1014]   Integration HmIP-BDT

[HMCCU2-1005]   Integration HmIP-FSM/FSM16

[HMCCU2-1002]   Integration HmIP-ASIR (Innensirene)

[HMCCU2-998]   Integration HmIP-SMO(-A) (Bewegungsmelder, Außen)

[HMCCU2-995]   Integration HmIP-RC8 (Fernbedienung, 8-Kanal)

[HMCCU2-993   Integration HmIP-WRC6 (Wandtaster, 6-fach)

[HMCCU2-988]   Integration HmIP-SRH (Fenstergriffsensor)

[HMCCU2-985]   Integration HmIP-BSM (Schaltaktor für Markenschalter, mit Leistungsmessung)

[HMCCU2-1244]   Easymode für rudimentäre Lamellenverstellung der Funk-Rollladenaktoren ergänzt

Fehlerbehebungen
[HMCCU2-1168]   Die Hysterese der Temperatur war bei direkten Verknüpfungen zwischen
                     Wandthermostaten und Aktoren als Zweipunktreglung nur noch auf ganze Grad
                     einstellbar. Nun sind 0.1 Grad-Schritte möglich.

 [HMCCU2-1161]   Bei Rolladenaktoren ließ sich beim Level kein Wert mit Nachkommastelle
                     eingeben.

[HMCCU2-1078]   Das Verhalten des Profils „Gewünschte Temperatur" eines HmIP-WTH bei
                     direktenVerknüpfungen ist je nach verwendeter Firmware u. U. leicht unterschiedlich. Die
                     Profilbeschreibung der jeweiligen Firmwareversion wurde angepasst.

[HMCCU2-903]   Bei der Erstellung einer direkten Verknüpfung zwischen einer HmIP-Fernbedienung
                     und eines HmIP-Wandthermostaten, fehlte bei dem Profil MANU die Möglichkeit,
                     die gewünschte Temperatur einzustellen.

2.21.10
Erweiterungen / Verbesserungen
[HMCCU2-1113]   Beim HmIP-SMI ist es nun möglich, die „Bewegung erkannt" Zeit einzustellen.

[HMCCU2-1060]   Für HmIP-Geräte steht nun Kanal 0 innerhalb von Programmen zur Verfügung.
                     Dadurch kann nun auch mit HmIP auf bestimmte Zustände des Gerätes reagiert
                     werden (z. B. Sabotagekontakt, Batterie leer usw.)

[HMCCU2-1055]   Stabilitätsverbesserung für HmIP

[HMCCU2-961]	Integration HM-LC-AO-SM (0 – 10V Aktor) Bausatz/ELV-Journal
[HMCCU2-954]	Integration HM-LC-Sw1-PCB (Funk-Schaltaktor 1-fach für Kleinspannung) Bausatz/ELV-Journal
[HMCCU2-887]	Integration HM-LC-Sw2PBU-FM (Funk-Schaltaktor, 2-fach für Markenschalter) Bausatz/ELV-Journal

Fehlerbehebungen

[HMCCU2-1142]	Cron-Job für cloudmatic check von 1 Minute auf 6 Stunden geändert.
[HMCCU2-1135]	Kommunikationsstörungen beim Hm-Sen-LI-O (Lichtsensor) behoben.
[HMCCU2-1116]	Beim HM-Sec-Sir-WM war bei Programmaktionen „intern scharf" und „extern scharf" vertauscht.
[HMCCU2-1105]	Bugfix für easy-smarthome – Den Benutzern wurden ihre Daten nach erfolgter Registrierung teilweise nicht angezeigt.
[HMCCU2-1093]	Bei Schaltaktoren wurde das Profil der internen Gerätetaste bei erneutem Aufrufen der Konfiguration von „Treppenhauslicht" in „Schalter Ein" geändert.

2.19.9

Erweiterungen / Verbesserungen

[HMCCU2-951]	Integration HmIP-SMI (Bewegungsmelder)
[HMCCU2-973]	Integration HmIP-KRCA (Ferndienung Alarm)
[HMCCU2-974]	Integration HmIP-SWSD (Rauchmelder)
[HMCCU2-779]	Integration HM-WDS100-C6-o-2 (Kombi-Wettersensor)
[TWIST-835]	Anzeige der Servicemeldungen von HmIP-Geräten
[HMCCU2-889]	Integration HM-Sec-Sir-WM (Innensirene)
[HMCCU2-890]	Integration HM-Dis-EP-WM55 (Statusanzeige mit E-Paper-Display)

Fehlerbehebungen

[HMCCU2-802]	Gerätetausch bei Heizungsgruppen funktioniert u. U. nicht.
[HMCCU2-970]	Der Energiezähler HM-ES-TX-WM konnte nicht zur Verwendung in Diagrammen genutzt werden.
[HMCCU2-977]	Probleme bei der Erstellung einer Verknüpfung des Wetterkombisensors mit einem Rolladenaktor.
[HMCCU2-1047]	Der Hilfe-Button verwies auf einen toten Link
[HMCCU2-1062]	Der Pfad zum Navigieren im Header der Web-UI war u. U. nicht korrekt

[HMCCU2-1098]   Geänderter Parameter einer Verknüpfung zwischen Tastenpaar und Jalousieaktor wurde u. U. nicht übernommen.
Es handelt sich dabei um den Parameter LONG_MAX_TIME_FIRST_DIR.
Hinweis:
Ist die Verknüpfung AES-gesichert, kann der Wert aus technischen Gründen nicht unter 0.8s geändert werden.

Known Bugs

Unter Umständen bleibt die Servicemeldung "Konfigurationsdaten stehen zur Übertragung an" bei HmIP-Geräten dauerhaft bestehen, obwohl die Daten korrekt übertragen wurden.

2.17.16

Erweiterungen / Verbesserungen

- EULA angepasst

2.17.15

Fehlerbehebungen

[HMCCU2-958] Der Sw1PBU-FM ließ sich nicht mehr anlernen.

[HMCCU2-959] Anzeige der aufsummierten Kosten der Energiezähler unter bestimmten Bedingungen um den Faktor 1000 falsch.

[HMCCU2-962] Die Verwendung der Einschaltdauer innerhalb von Programmen konnte bei den Geräten HmIP-PS/PSM zu Fehlverhalten führen.
- Die angezeigten Wochenprofile 2 und 3 der Homematic IP-Thermostate (Wand/Heizkörper) stimmten nicht mit den in den Geräten gespeicherten Profilen überein. Um dieses Fehlverhalten für die beiden betroffenen Profile zu korrigieren, müssen die betroffenen Geräte mit der CCU2-Version 2.17.15 neu angelernt werden.
- Die Startreihenfolge vom Homematic und Homematic IP Server wurde synchronisiert (Stabilitätsverbesserung beim Booten der CCU2).
- Zyklische Ausgaben (alle 5 Minuten) in var/log/messages entfernt
- Ein falscher Index bei bestimmten Diagrammtypen sorgte dafür, dass diese Diagramme fehlerhaft angezeigt wurden. Diagramme, die unter der Version 2.17.14 angelegt wurden, und folgende Datentypen enthalten, müssen in der Version 2.17.15 gelöscht und neu angelegt werden.
Es sind folgende Datentypen betroffen: Windgeschwindigkeit, Windrichtung, Regen, Regenmenge, Ventilstatus, aktuelle Temperatur, Solltemperatur, Füllstandslevel, Energiezähler Gas u. momentaner Gasverbrauch.

2.17.14

Erweiterungen / Verbesserungen

[HMCCU2-792] Integration des HMOU_CFM-TW (MP3 Funk-Gong mit Signalleuchte)

[HMCCU2-837] Integration des HM-Sen-LI-O (Lichtsensor)

[HMCCU2-839] Integration des HM-Sec-MDIR-3 (Bewegungsmelder)

[HMCCU2-883] Integration Smart-Meter-Sensor für HM-ES-TX-WM.

[HMCCU2-898] Firewall-Regeln erweitert

[HMCCU2-899] Integration des HM-WDS30-OT2-SM-2 (Temperaturdifferenz-Sensor).

Support für HmIP-Geräte
Unterstützte Geräte:
HmIP-PS, HmIP-PSM, HmIP-WRC2, HmIP-SWDO, HmIP-WTH, HmIP-eTRV, HmIP-KRC4
Unterstützte Funktionen:
Konfigurierung, Bedienung, Verknüpfungen von Geräten der HmIP-Generation, Verwendung von HmIP-Geräten innerhalb Programmen, Diagramme
Noch nicht unterstützte Funktionen:
Gruppen, Gerätetausch, Service-Meldungen

Fehlerbehebungen

[HMCCU2-809]   Duty-Cycle-Bug behoben

[HMCCU2-868]   Möglicher Verbindungsabriss zum Wired-Gateway gefixt.

[HMLGWOTWWEU-18]   Stabilität des LAN-Gateways verbessert

[EQ3_SUPPORT-5]   Stabilität CCU2 Netzwerk verbessert

2.15.5
Erweiterungen / Verbesserungen
[HMCCU2-769] Integration des HM-ES-PMSw1-SM (HM-Schalt/Messaktor Aufputz)

[HMCCU2-772] Optimierung der Überprüfung auf neue Gerätefirmwaredateien.

Fehlerbehebungen

[HMCCU2-806] Die Temperaturwerte der Balkendiagramme für den Zeitraum "Monat" wurden falsch dargestellt.

[HMCCU2-813] Unter bestimmten Umständen konnten keine direkten Verknüpfungen mehr angelegt werden.

[HMCOP-24]   Timing Probleme beim Anlernen von Geräten bei gesetztem Systemschlüssel behoben

2.15.2
Erweiterungen / Verbesserungen
[HMCCU2-601] Der Öffnungsgrad von Jalousieaktoren unter Status und Bedienung wird nun verständlicher dargestellt.

[HMCCU2-699] Bei der Zuweisung von Rauchmeldern zu Teams, wird nun, anstatt Gerätetyp und Seriennr., der Name der Rauchmeldergruppen zur Auswahl angeboten.

[HMCCU2-713] Integration des HM-ES-PMSw1-DR (Funk-Schaltaktor mit Leistungsmessung für Hutschienenmontage.

[HMCCU2-714] Integration des HM-LC-Sw1-Pl-CT (Funk-Schaltaktor mit Klemmanschluss und spezieller Option für 0.4s Einschaltdauer).

[HMCCU2-722] Neue Firmwareversionen vorhandener Geräte werden nun auf der Startseite angezeigt.

[HMCCU2-726] Filterhandling beim Wählen von Systemvariablen innerhalb von Programmen verbessert (Fokus bei Aufruf, Enter mittels Return, Cancel mittels ESC).

[HMCCU2-734] Integration des HMW-LC-Bl1-DR-2 (Rollladenaktor, wired, Hutschiene).

[HMCCU2-736] Menüpunkt "Geräte-Firmware" in der Gesamtübersicht der Einstellungen hinzugefügt.

[HMCCU2-750] Integration des HM-LC-RGBW-WM (Funk-RGBW-Controller für LED-Stripes).

[HMCCU2-766] Das virtuelle Gerät einer Gruppe erhalt nun den Gruppennamen.

[HMCCU2-778] Für Verknüpfungen eines Schaltaktors mit Kanal 7 des Wandthermostates HM-TC-IT-WM-W-EU, ist nun eine Hysterese einstellbar.

Fehlerbehebungen
[HMCCU2-733] Alarmmeldungen wurden u. U. falsch gesetzt.

[HMCCU2-742] JSON-RPC API Formatfehler behoben.

[HMCCU2-789] Die Berechnung der Monats- und Jahreswerte von Balkendiagrammen wurde überarbeitet.

2.13.7
Erweiterungen / Verbesserungen
[HMCCU2-537] Einem eingebundenen LAN-Gateway kann nun ein Name zugeordnet werden.

[HMCCU2-591] Vergleichszeitraum für Diagramme hinzugefügt.

[HMCCU2-642] Einbindung eines LAN-Gateways vereinfacht.

[HMCCU2-687] 2-fach Funksender (HM-RC-2-PBU-FM) hinzugefügt.

[HMCCU2-688] Display-Fernbedienung (HM-RC-Dis-H-x-EU) hinzugefügt.

[HMCCU2-690] Darstellung des realen Dimm-Levels bei Dimmern mit virtuellen Kanälen (im Expertenmodus).

[HMCCU2-692] HM-Sec-SD-2 (Rauchmelder) hinzugefügt.

[HMCCU2-695] HM-LC-Sw1-DR (Treppenhausautomat) hinzugefügt.

Fehlerbehebungen
[HMCCU2-727] Der Wasserstandsmelder setzt zugewiesene Alarmvariable bei Meldung von Feuchtigkeit falsch.

[HMCCU2-710] Hinweis auf bestehende Verknüpfung beim Aufruf von Kanalparametern u. U. am falschen Kanal.

[HMCCU2-731] Kommunikationsprobleme bei hoher Belastung behoben.

[HMCCU2-693] Nach Neustart der Zentrale zeigte der CCU-Zähler der Energiemessgeräte einen zu hohen Wert an. Um diesen Fehler zu beseitigen, ist ein Ab- und erneutes Anlernen der betroffenen Geräte nötig.

2.11.9
Fehlerbehebungen
[HMCCU2-681] HM-ES-Tx-WM: keine Eingabe eines negativen Wertes beim Parameter 'Zählerempfindlichkeit' möglich.

[HMCCU2-693] HM-ES-Tx-WM: fehlerhafter CCU-Zähler nach Geräteneustart.

2.11.6
Erweiterungen / Verbesserungen
[HMCCU2-487] Bei der Gruppenfunktion ist das automatische Umschalten von Sommer- auf Winterzeit jetzt per default aktiviert.

[HMCCU2-551] Das neue drahtlose Status Display (HM-Dis-WM55) wurde hinzugefügt.

[HMCCU2-563] HM-PB-2-WM55-2 für die Verwendung in Gruppen vorgesehen.

[HMCCU2-597] Die Kanäle des HM-MOD-EM8 können jetzt folgende Betriebsarten annehmen: Taster, Schalter, Tür-/Fensterkontakt oder nicht aktiv

[HMCCU2-615] Der neue drahtlose Türklingel-Sensor (HM-Sen-DB-PCB) wurde hinzugefügt.

[HMCCU2-616] Der neue drahtlose Strom-/Gassensor (HM-ES-Tx-WM) wurde hinzugefügt.

[HMCCU2-623] Beim Schaltaktor mit Leistungsmessung werden die Experteneinstellungen nach der Übertragung nicht angezeigt.

[HMCCU2-626] Der neue Bewegungsmelder mit Tastenpaar (HM-Sen-MDIR-WM55) hinzugefügt.

[HMCCU2-638] Die automatische Anpassung der Y-Achse bei Diagrammen im Auto-Modus wird jetzt entsprechend der Min-/Max-Werte skaliert.

Fehlerbehebungen
[HMCCU2-529] Die Überschrift der HM-SYys-sRP-Pl Parameter-Checkboxen unter Kanaleinstellungen wurde u. U. nicht angezeigt.

[HMCCU2-588] Der CSV Datenexport der Diagrammfunktion war fehlerhaft.

[HMCCU2-627] Bei der Diagrammfunktion wurden die Werte der Y-Achse u. U. (Werte größer 1000) falsch dargestellt.

[HMCCU2-628] Bei den Diagrammtypen Temperatur- u. Leistungsmessung wurden benutzerdefinierte Y-Werte ignoriert, es wurde immer 'AUTO' verwendet.

[HMCCU2-632] Benutzerdefinierte Raum- oder Gewerkenamen erschienen als Platzhalter

[HMCCU2-635] Das Hochladen einer neuen Gerätefirmwaredatei war erfolglos, wenn schon eine ältere Version vorhanden war.

[HMCCU2-641] Unter Allgemeine Geräteeinstellungen wurde beim HM-PB-4Dis-WM-2 eine falsche Gerätebezeichnung angezeigt.

[HMCCU2-656] Bei der WinMatic war unter Zentralenprogramme die Option 'Fenster verriegeln' nicht mehr möglich.

2.9.12
Erweiterungen / Verbesserungen
[HMCCU2-614] Changelog Datei bei Geräte Firmware Update Files anzeigen

Fehlerbehebungen
[HMCCU2-579] Sicherheitsanforderungen der CCU2 Firewall werden nicht umgesetzt

[HMCCU2-613] Bedienung Heizkörperthermostat in Favoriten / Gewerken fehlerhaft

[HMCCU2-618] CCU2 - Favoritenansicht für HM-CC-TC ist fehlerhaft

[HMCCU2-619] Wasserstandsmelder zur Diagrammerstellung wieder hinzufügen.

[HMCCU2-625] Rolladenaktor HM-LC-BI1PBU-FM Version 2.1 kann nicht über OTAU aktualisiert werden

2.9.10
Erweiterungen / Verbesserungen
[HMCCU2-558] Der neue HomeMatic Fensterkontakt optisch (HM-SEC-SCo) wurde hinzugefügt

[HMCCU2-571] Die neue HomeMatic 8-fach Fernbedienung (HM-RC-8) wurde hinzugefügt

[HMCCU2-478] Der neue HomeMatic Funk-Wandtaster 2-fach für Markenschalter (HM-PB-2-FM) hinzugefügt

[HMCCU2-549] Geräte Firmware Update Dateien können über die WebUI installiert werden. Ob Ihre Geräte die Over The Air Update Funktion (OTAU) unterstützen und neue Firmware Versionen vorliegen, können Sie auf der Webseite www.homematic.com unter "Downloads" überprüfen.

[HMCCU2-487] Umstellung Sommer-Winterzeit bei Heizgruppen hinzugefügt

[HMCCU2-509] Beim Heizkörperthermostat (HM-CC-RT-DN), Wandthermostat (HM-TC-IT-WM-W-EU) und bei Heizgruppen kann der Auto-/Manu-/Eco-/Boost- und Urlaubsmodus unter Status & Bedienung eingestellt werden

[HMCCU2-562] Verzögerte Sendewiederholung bei CONFIG_PENDING für 'Permanent-Listener'. Sollten Konfigurationsänderungen nicht sofort übertragen werden, wird nach 5 bzw. 10 Sekunden erneut versucht, die Änderungen zu übertragen.

[HMCCU2-603] Energiekostenanzeige beim HomeMatic Funk-Schaltaktor 1-fach mit Leistungsmessung, Zwischenstecker (HM-ES-PMSw1-Pl Die Kosten pro kWh können Sie unter "Einstellungen/Allgemeine Einstellunge" eintragen.

[HMCCU2-379] Neue Diagramme zur Leistungsmessung (Balkendiagramme, Energieverbrauch pro Tag/Woche/Monat/Jahr)

Fehlerbehebungen
[HMCCU2-466] Werte im Zeitmodule werden gelöscht (1970 Problem). Ab der 2.9.10 Version werden keine Zeitmodule mehr gelöscht. Bitte kontrollieren Sie nach dem Update alle Zeitmodule und ergänzen notfalls gelöschte Einträge. Der erste Neustart nach dem Update auf 2.9.10 kann etwas länger dauern, da alle Programme überprüft werden, ob ungültige Referenzen existieren.

[HMCCU2-466] Programme lassen sich nicht mehr editieren

[HMCCU2-507] HM-LGW-O-TW-W-EU Firmware Update funktioniert nicht wenn IP Adresse in WebUI konfiguriert ist

[HMCCU2-508] RFD kann keine Verbindung zu HM-LGW-O-W-TW-EU aufbauen, wenn in der WebUI eine IP Adresse konfiguriert ist

[HMCCU2-573] Programminhalt wird doppelt angezeigt

[HMCCU2-524] Überflüssiger AES-Schlüsseltausch bei allen angelernten Geräten, die sich während aktiven Anlernmodus gemeldet haben

[HMCCU2-525] Im Geräte-Posteingang funktioniert der "Löschen" Button nicht

[HMCCU2-544] Zeitmodul: Gültigkeitsdauer einstellen mit IE 9 + 10 + 11

[HMCCU2-547] Probleme mit Funk-LAN-Gateway und Heizkörperthermostate behoben. Nach einem LAN-Reconnect wurde die Uhrzeit nicht gesetzt

[HMCCU2-561] In der Raumliste Scrollleiste hinzugefügt

[HMCCU2-569] Diverse Übersetzungen hinzugefügt

2.7.17
[HMCCU2-522] Kommunikationsprobleme mit dem neuen HomeMatic Funk LAN Gateway (HM-LGW-O-TW-W-EU) behoben

2.7.16
[HMCCU2-506] Wired Service stürzt ab, wenn eine IP Adresse in der WebUI angegeben wird.

2.7.14 Darf nicht bei Verwendung von HomeMatic Wired Geräten verwendet werden. Nähere Informationen dazu finden Sie auf der eQ-3 Webseite.

[HMCCU2-453] Fehlermeldungen beim HomeMatic Funk-Dimmaktor (HM-LC-Dim1PWM-CV) übersetzt

[HMCCU2-443] HomeMatic Funk-Heizkörperthermostat (HM-CC-RT-DN) - Ist-Temperatur in Gewerken u. Räumen wird nicht korrekt angezeigt

[HMCCU2-439] Messdatenerfassung funktioniert nach längerer Laufzeit nicht mehr korrekt

[HMCCU2-350] 1. und 2. interne Taste haben beim HomeMatic Funk-Rollladenaktor (HM-LC-Bl1-SM) das Profil "Experte"

[HMCCU2-420] Bei der Sortierung der Geräteliste (auch im Posteingang) gehen Elemente der Seite verloren.

[HMCCU2-437] Nachdem der DHCP-Dienste wieder verfügbar ist, baut die Zentrale die Verbindung zu einem Wired Gateway nicht erneut auf.

[HMCCU2-430] Wird unter dem Windows 8.1 mit IE 11 eine neue Verknüpfung erstellt, erscheint die Auswahlliste der Geräte mit sehr großem Abstand zueinander.

[HMCCU2-430] Fehler 412 in WEBUI bei Benutzung vom Safari Browser

Erweiterungen / Verbesserungen

[HMCCU2-335] Das neue HomeMatic Funk LAN Gateway (HM-LGW-O-TW-W-EU) wurde hinzugefügt

[HMCCU2-335] Der neue HomeMatic Wandthermostat (HM-TC-IT-WM-W-EU) wurde hinzugefügt

[HMCCU2-335] Der neue HomeMatic Funkschalter (HM-LC-Sw4-DR-2) wurde hinzugefügt

[HMCCU2-335] Der neue HomeMatic Funkschalter (HM-LC-Sw1-Pl-3) wurde hinzugefügt
[HMCCU2-462] Türkisches Sprachpaket hinzugefügt

[HMCCU2-477] Diagrammfunktion für den kapazitiven Füllstandsmesser (HM-Sen-Wa-Od) erweitert

[HMCCU2-476] Diagrammfunktion für den Wandthermostat (HM-TC-IT-WM-W-EU) erweitert

Known Bugs

Funk LAN Gateway:

Wenn das neue Funk LAN Gateway (HM-LGW-O-TW-W-EU) verwendet wird, muss das Gateway vor der CCU2 eingeschaltet sein.
Wird das Gateway erst nach der CCU2 eingeschaltet, wird das Gateway von der CCU2 nicht erkannt.
Workaround: nicht vorhanden.

Funk LAN Gateway:

Ändert sich die IP Adresse des Gateways, muss die Zentrale neu gestartet werden.
Dies ist auch der Fall, wenn nach einem zentralen Stromausfall der DHCP-Dienst nicht schnell genug zur Verfügung steht.
Workaround: Mit dem NetFinder eine feste IP Adresse vergeben.
Aktuelle Informationen zu bekannten Problemen finden Sie auch im FAQ Bereich der eQ-3 Webseite (www.eq-3.de).

2.7.8

[HMCCU2-264] Simulierter Tastendruck bei Wired Geräten wird nicht ausgeführt

[HMCCU2-297] Programme verschwinden oder können nicht mehr bearbeitet werden
Beim Start der Version 2.7.8 werden Überprüfungen / Änderungen an der internen Datenbank vorgenommen.
Dieser Vorgang kann einigen Minuten in Anspruch nehmen. Während dieser Zeit ist die Zentrale nicht ansprechbar.

[HMCCU2-308] Funk-Schaltaktor mit Leistungsmessung (HM-ES-PMSw1-Pl) integrieren

[HMCCU2-330] Öffnungswinkel der HomeMatic Funk-Fensterantrieb WinMatic (HM-Sec-Win) wird beim IE grafisch nicht dargestellt.

[HMCCU2-320] SSH Zugang kann über die WebUI (Systemsteuerung/Sicherheit) aktiviert / deaktiviert werden (einschl. Passwort setzen)

[HMCCU2-321] HomeMatic Funk-Regensensor (HM-Sen-RD-O) - ab Firmwareversion 1.4 gibt es 4 neue Parameter. "Over The Air Update" Datei (OTAU) hinzugefügt

[HMCCU2-331] HomeMatic Funk-Tür-Fenster Kontakt (HM-Sec-SC-2) hinzufügen

[HMCCU2-333] Fenster zum Umstellen der Gewerke bzw. der Räume der im Posteingang befindlichen Geräte läßt sich nicht wieder "Schließen".

[HMCCU2-339] RAMP_STOP unter Programme beim HomeMatic Funk-Dimmaktor (HM-LC-Dim1T-Pl-3) nicht übersetzt.

[HMCCU2-340] Beim HomeMatic Funk-Dimmaktor (HM-Dim1T-Pl-3) kann kein Wertebereich größer 1 eingegeben werden.

[HMCCU2-358] Nach dem Hinzufügen des HomeMatic Wired RS485 LAN Gateway's (HMW-LGW-O-DR-GS-EU) wird das Logfile mit Debug Infos vollgeschrieben

[HMCCU2-431] Funkprobleme beim HomeMatic Funk-Heizkörperthermostat (HM-CC-RT-DN) behoben. "Over The Air Update" Datei (OTAU) hinzugefügt

Erweiterungen / Verbesserungen

[HMCCU2-337] Messdatenerfassung und -visualisierung
Eine genaue Funktionsbeschreibung finden Sie im WebUI Handbuch Version 3.0 (Download eQ-3 Webseite)

[HMCCU2-337] Heizgruppenkonzept
Eine genaue Funktionsbeschreibung finden Sie im WebUI Handbuch Version 3.0 (Download eQ-3 Webseite)

2.5.4

Bugfixes

[HMCCU2-298] Das Profil "nicht aktiv" bei interner Gerätetaste von Dimmern verursachte einen Fehler.

[HMCCU2-301] Easymode zwischen HomeMatic Wired RS485 Dimmakto (HMW-LC-Dim1L-DR) und HomeMatic Wired RS485 I/O-Modul (HMW-IO-4-FM) zeigte eine leere Seite

[HMCCU2-302] Der Hinweis zur Länge des Sicherheitsschlüssel wurde korrigiert.

[HMCCU2-305] Bei Verwendung bestimmter Variablennamen innerhalb von Scripts, wurde das Script ungültig.

[HMCCU2-311] EasyMode zwischen HomeMatic Funk-Dimmaktor (HM-LC-Dim1TPBU-FM) und Virtuellem CCU2-Kanal zeigte eine leere Seite.

[HMCCU2-314] Die Hilfe-Funktion einer Verknüpfung zwischen einem Bewegungsmelder und der WinMatic war fehlerhaft.

Erweiterungen / Verbesserungen

[HMCCU2-276] Der neue HomeMatic Heizkörperthermostat (HM-CC-RT-DN) wurde hinzugefügt.

[HMCCU2-319] Bei der Sprache der WebUI kann benutzerabhängig zwischen Deutsch u. Englisch gewählt werden.

2.3.18

Bugfixes

[HMCCU2-297] Stabilität beim Betrieb komplexer Installationen verbessert.

2.3.17

Bugfixes

[HMCCU2-254] Innerhalb von Programmen mit Rollladenaktoren kommt das Wort "Behanghöhe" doppelt vor.

[HMCCU2-257] Info LED signalisiert keine Alarmmeldungen.

[HMCCU2-258] Wandthermostat zeigt einen Zeitunterschied von ungefähr 5 Minuten an.

[HMCCU2-260] Wired Service (hs485d) schreibt Debug als Error raus.

[HMCCU2-263] °C wird innerhalb des Expertenmodus der Easymodes falsch dargestellt.

[HMCCU2-288] Zeitunterschied zwischen Wandthermostat und CCU2 steigt kontinuierlich.

2.3.17

Bugfixes

[HMCCU2-254] Innerhalb von Programmen mit Rollladenaktoren kommt das Wort "Behanghöhe" doppelt vor.

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Junio Hamano. Added support for FTP Opie and HTTP digest
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Dan Harkless. Added --backup-converted, --follow-tags, --html-extension,
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Steven Schubiger. Many helpful patches, bugfixes and improvements.
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Ted Mielczarek. Support for parsing links from CSS.
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# cgi.tcl - routines for writing CGI scripts in Tcl
# Author: Don Libes <libes@nist.gov>, January '95
# Minor changes by Lars Reemts, eQ-3
# These routines implement the code described in the paper
# "Writing CGI scripts in Tcl" which appeared in the Tcl '96 conference.
# Please read the paper before using this code.  The paper is:
# http://expect.nist.gov/doc/cgi.pdf
# F. Werner:
#  add "charset=iso-8859-1" to header Content-Type
```

tmpl_parser.tcl

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Kanryu KATO
tmpl_parser.tcl
#
Tcl embeddedd script parser(a template engine)
#
This module comverts Tcl embedded scripts into a Tcl normal script(parser),
after you just have to do eval command for the generated parser.
#
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#
Modified by F. Werner (eQ-3 Entwicklung GmbH):
- require Tcl 8.2 instead of 8.3

Javascript MD5

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      c) If the modified program normally reads commands interactively when
      run, you must cause it, when started running for such interactive use
      in the simplest and most usual way, to print or display an
      announcement including an appropriate copyright notice and a notice
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      exchange for a fee.

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    b) accompany it with a written offer, valid for at least three
    years, to give any third party free (except for a nominal charge
    for the cost of distribution) a complete machine-readable copy of the
    corresponding source code, to be distributed under the terms of
    Paragraphs 1 and 2 above; or,

    c) accompany it with the information you received as to where the
    corresponding source code may be obtained. (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form alone.)

Source code for a work means the preferred form of the work for making
modifications to it. For an executable file, complete source code means
all the source code for all modules it contains; but, as a special
exception, it need not include source code for modules which are standard
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           Appendix: How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to humanity, the best way to achieve this is to make it
free software which everyone can redistribute and change under these
terms.

  To do so, attach the following notices to the program. It is safest to
attach them to the start of each source file to most effectively convey
the exclusion of warranty; and each file should have at least the
"copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) 19yy <name of author>

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Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) 19xx name of author

```
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the
appropriate parts of the General Public License. Of course, the
commands you use may be called something other than `show w' and `show
c'; they could even be mouse-clicks or menu items--whatever suits your
program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary. Here a sample; alter the names:

```
  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  program `Gnomovision' (a program to direct compilers to make passes
  at assemblers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice
```

That's all there is to it!

GNU General Public License, Version 2 (GPLv2)

```
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    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
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Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

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    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
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The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
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You should also get your employer (if you work as a programmer) or your
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  `Gnomovision' (which makes passes at compilers) written by James Hacker.

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the interface presents a list of user commands or options, such as a
menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work
for making modifications to it. "Object code" means any non-source
form of a work.

A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
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The "System Libraries" of an executable work include anything, other
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"Major Component", in this context, means a major essential component
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(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all
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work) run the object code and to modify the work, including scripts to
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the work, and the source code for shared libraries and dynamically
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    c) You must cause the whole of the work to be licensed at no
    charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a
    table of data to be supplied by an application program that uses
    the facility, other than as an argument passed when the facility
    is invoked, then you must make a good faith effort to ensure that,
    in the event an application does not supply such function or
    table, the facility still operates, and performs whatever part of
    its purpose remains meaningful.

    (For example, a function in a library to compute square roots has
    a purpose that is entirely well-defined independent of the
    application. Therefore, Subsection 2d requires that any
    application-supplied function or table used by this function must
    be optional: if the application does not supply it, the square
    root function must still compute square roots.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Library,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Library, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote
it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.

In addition, mere aggregation of another work not based on the Library
with the Library (or with a work based on the Library) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public
License instead of this License to a given copy of the Library. To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
instead of to this License. (If a newer version than version 2 of the
ordinary GNU General Public License has appeared, then you can specify
that version instead if you wish.) Do not make any other change in
these notices.

  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

    a) Accompany the work with the complete corresponding
    machine-readable source code for the Library including whatever
    changes were used in the work (which must be distributed under
    Sections 1 and 2 above); and, if the work is an executable linked

with the Library, with the complete machine-readable "work that
uses the Library", as object code and/or source code, so that the
user can modify the Library and then relink to produce a modified
executable containing the modified Library. (It is understood
that the user who changes the contents of definitions files in the
Library will not necessarily be able to recompile the application
to use the modified definitions.)

    b) Accompany the work with a written offer, valid for at
    least three years, to give the same user the materials
    specified in Subsection 6a, above, for a charge no more
    than the cost of performing this distribution.

    c) If distribution of the work is made by offering access to copy
    from a designated place, offer equivalent access to copy the above
    specified materials from the same place.

    d) Verify that the user has already received a copy of these
    materials or that you have already sent this user a copy.

  For an executable, the required form of the "work that uses the
Library" must include any data and utility programs needed for
reproducing the executable from it. However, as a special exception,
the source code distributed need not include anything that is normally
distributed (in either source or binary form) with the major
components (compiler, kernel, and so on) of the operating system on
which the executable runs, unless that component itself accompanies
the executable.

  It may happen that this requirement contradicts the license
restrictions of other proprietary libraries that do not normally
accompany the operating system. Such a contradiction means you cannot
use both them and the Library together in an executable that you
distribute.

  7. You may place library facilities that are a work based on the
Library side-by-side in a single library together with other library
facilities not covered by this License, and distribute such a combined
library, provided that the separate distribution of the work based on
the Library and of the other library facilities is otherwise
permitted, and provided that you do these two things:

    a) Accompany the combined library with a copy of the same work
    based on the Library, uncombined with any other library
    facilities. This must be distributed under the terms of the
    Sections above.

    b) Give prominent notice with the combined library of the fact
    that part of it is a work based on the Library, and explaining
    where to find the accompanying uncombined form of the same work.

  8. You may not copy, modify, sublicense, link with, or distribute
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  Ty Coon, President of Vice

That's all there is to it!
```

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or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
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```

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it. And you must show them these terms so they know their rights.

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  We call this license the "Lesser" General Public License because it
does Less to protect the user's freedom than the ordinary General
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of an advantage over competing non-free programs. These disadvantages
are the reason we use the ordinary General Public License for many
libraries. However, the Lesser license provides advantages in certain
special circumstances.

  For example, on rare occasions, there may be a special need to
encourage the widest possible use of a certain library, so that it becomes
a de-facto standard. To achieve this, non-free programs must be
allowed to use the library. A more frequent case is that a free
library does the same job as widely used non-free libraries. In this
case, there is little to gain by limiting the free library to free
software only, so we use the Lesser General Public License.

  In other cases, permission to use a particular library in non-free
programs enables a greater number of people to use a large body of
free software. For example, permission to use the GNU C Library in
non-free programs enables many more people to use the whole GNU
operating system, as well as its variant, the GNU/Linux operating
system.

  Although the Lesser General Public License is Less protective of the
users' freedom, it does ensure that the user of a program that is
linked with the Library has the freedom and the wherewithal to run

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   A "library" means a collection of software functions and/or data
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   The "Library", below, refers to any such software library or work
which has been distributed under these terms. A "work based on the
Library" means either the Library or any derivative work under
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   Activities other than copying, distribution and modification are not
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running a program using the Library is not restricted, and output from
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    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices

stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no
charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a
table of data to be supplied by an application program that uses
the facility, other than as an argument passed when the facility
is invoked, then you must make a good faith effort to ensure that,
in the event an application does not supply such function or
table, the facility still operates, and performs whatever part of
its purpose remains meaningful.

(For example, a function in a library to compute square roots has
a purpose that is entirely well-defined independent of the
application. Therefore, Subsection 2d requires that any
application-supplied function or table used by this function must
be optional: if the application does not supply it, the square
root function must still compute square roots.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Library,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Library, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote
it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.

In addition, mere aggregation of another work not based on the Library
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License instead of this License to a given copy of the Library. To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
instead of to this License. (If a newer version than version 2 of the
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that version instead if you wish.) Do not make any other change in
these notices.

  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a
medium customarily used for software interchange.

If distribution of object code is made by offering access to copy
from a designated place, then offering equivalent access to copy the
source code from the same place satisfies the requirement to
distribute the source code, even though third parties are not
compelled to copy the source along with the object code.

   5. A program that contains no derivative of any portion of the
Library, but is designed to work with the Library by being compiled or
linked with it, is called a "work that uses the Library". Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

   However, linking a "work that uses the Library" with the Library
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contains portions of the Library), rather than a "work that uses the
library". The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

   When a "work that uses the Library" uses material from a header file
that is part of the Library, the object code for the work may be a
derivative work of the Library even though the source code is not.
Whether this is true is especially significant if the work can be
linked without the Library, or if the work is itself a library. The
threshold for this to be true is not precisely defined by law.

   If such an object file uses only numerical parameters, data
structure layouts and accessors, and small macros and small inline
functions (ten lines or less in length), then the use of the object
file is unrestricted, regardless of whether it is legally a derivative
work. (Executables containing this object code plus portions of the
Library will still fall under Section 6.)

   Otherwise, if the work is a derivative of the Library, you may
distribute the object code for the work under the terms of Section 6.
Any executables containing that work also fall under Section 6,
whether or not they are linked directly with the Library itself.

   6. As an exception to the Sections above, you may also combine or
link a "work that uses the Library" with the Library to produce a
work containing portions of the Library, and distribute that work
under terms of your choice, provided that the terms permit
modification of the work for the customer's own use and reverse
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   You must give prominent notice with each copy of the work that the
Library is used in it and that the Library and its use are covered by
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during execution displays copyright notices, you must include the
copyright notice for the Library among them, as well as a reference
directing the user to the copy of this License. Also, you must do one
of these things:

    a) Accompany the work with the complete corresponding
    machine-readable source code for the Library including whatever
    changes were used in the work (which must be distributed under
    Sections 1 and 2 above); and, if the work is an executable linked
    with the Library, with the complete machine-readable "work that
    uses the Library", as object code and/or source code, so that the
    user can modify the Library and then relink to produce a modified
    executable containing the modified Library. (It is understood
    that the user who changes the contents of definitions files in the
    Library will not necessarily be able to recompile the application

to use the modified definitions.)

    b) Use a suitable shared library mechanism for linking with the
    Library. A suitable mechanism is one that (1) uses at run time a
    copy of the library already present on the user's computer system,
    rather than copying library functions into the executable, and (2)
    will operate properly with a modified version of the library, if
    the user installs one, as long as the modified version is
    interface-compatible with the version that the work was made with.

    c) Accompany the work with a written offer, valid for at
    least three years, to give the same user the materials
    specified in Subsection 6a, above, for a charge no more
    than the cost of performing this distribution.

    d) If distribution of the work is made by offering access to copy
    from a designated place, offer equivalent access to copy the above
    specified materials from the same place.

    e) Verify that the user has already received a copy of these
    materials or that you have already sent this user a copy.

  For an executable, the required form of the "work that uses the
Library" must include any data and utility programs needed for
reproducing the executable from it. However, as a special exception,
the materials to be distributed need not include anything that is
normally distributed (in either source or binary form) with the major
components (compiler, kernel, and so on) of the operating system on
which the executable runs, unless that component itself accompanies
the executable.

  It may happen that this requirement contradicts the license
restrictions of other proprietary libraries that do not normally
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permitted, and provided that you do these two things:

    a) Accompany the combined library with a copy of the same work
    based on the Library, uncombined with any other library
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GCC Runtime Library Exception, Version 3.1

GCC RUNTIME LIBRARY EXCEPTION

Version 3.1, 31 March 2009

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