# Hinweis

Diese Software enthält freie Software Dritter, die unter verschiedenen Lizenzbedingungen weitergegeben wird. Eine Auflistung der freien Software, die in dieser Software zum Einsatz kommt, sowie die Lizenzbedingungen unter denen diese weitergegeben wird, finden Sie anbei.

Die Veröffentlichung der freien Software erfolgt, "wie es ist", OHNE IRGENDEINE GARANTIE. Unsere gesetzliche Haftung bleibt hiervon unberührt. Sofern die jeweiligen Lizenzbedingungen es erfordern, stellen wir Ihnen eine vollständige maschinenlesbare Kopie des Quelltextes der freien Software zur Verfügung. Kontaktieren Sie uns hierfür bitte unter <u>support@eq-3.de</u>.

# Sicherheitshinweis – Port Forwarding NICHT benutzen

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

#### 2.47.10

#### Geräteintegration

001010001000	
[HMCCU-155]	Integration HmIP-MIO16-PCB
[HMCCU-152]	Integration HmIP-ASIR-2
[HMCCU-28]	Integration HmIP-FALMOT-C12

#### Fehlerbehebungen

renerbenebungen	
[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

0 /	0
[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	Integration Units DCD4 (Homematic ID Fourthedian und mit Montegory with 14 Kausel 51)/
[HMCCU2-1860]	Integration HmIP-RCB1 (Homematic IP Fernbedienung mit Montagegurt – 1-Kanal, ELV-

[HMCCU2-1860]	Integration HmIP-RCB1 (Homematic IP Fernbedienung mit Montagegurt – 1-Kanal, ELV-
[11116662 1000]	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 ٠ wird deutlich länger dauern.
- Änderungen an den Logikschicht-Varianten:
  - Die Version "Community" heißt jetzt "Standard (Default).
  - Die Version "Standard" heißt jetzt "Kompatibilitätsmodus".
  - 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] [HMCCU2-1373]	Integration HmIP-SLO (Homematic IP Lichtsensor – außen) Integration HmIP-BSL (Homematic IP Schaltaktor für Markenschalter – mit Signalleuchte)
Erweiterungen / Verb	esserungen
[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 vo	on 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 / Verb	esserungen
[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 <b>einmalig</b> 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 / Verb [HMCCU2-1452]	esserungen / Änderungen 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.

#### HmIP-SPI:

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	
	<ul> <li>Directory Traversal Schwachstelle behoben</li> </ul>	
	<ul> <li>SSH Daemon erlaubt nur noch sichere Cipher und MACs</li> </ul>	
	- Weitere Ports in der firewall.conf eingetragen	
	<ul> <li>Sicherheitslücke beim Pr</li></ul>	
[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] [HMCCU2-1297] "Daten	Filtern nach Interface/Kategorie HmIP in der Geräteliste ergänzt. HM-MOD-EM-8Bit – Die Nummerierung der Modusauswahl des Parameters übertragungsbedingungen" 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 Lamellensteueru	C-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] Integration 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<br/>Wandthermostaten und Aktoren als Zweipunktreglung nur noch auf ganze Grad<br/>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<br/>direktenVerknüpfungen ist je nach verwendeter Firmware u. U. leicht unterschiedlich. Die<br/>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 / Verk [HMCCU2-951]	Desserungen 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] [HMCCU2-977]	Der Energiezähler HM-ES-TX-WM konnte nicht zur Verwendung in Diagrammen genutzt werden. 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-PI-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-PI 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-PI-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 (<u>www.eq-</u><u>3.de</u>).

#### 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-PI) 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-PI-3) nicht übersetzt.
- [HMCCU2-340] Beim HomeMatic Funk-Dimmaktor (HM-Dim1T-PI-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.

# Closed-Source Licenses and Copyright-Statements

The HomeMatic Centre firmware contains Closed-Source software. The appendix contains all applicable licensing terms and copyright statements.

#### Java Standard Edition embedded binary (Java SE)

#### License Terms and Copyright notice

This software is copyrighted by Oracle America Inc., 500 Oracle Parkway, Redwood Shores, California 94065, USA. The following terms apply to all files associated with the software unless explicitly disclaimed in individual files. JAVA TECHNOLOGY RESTRICTIONS. You may not create, modify or change the behaviour of classes, interfaces, or subpackages that are in any way identified as "Java", "Javax", "Sun" or similar convention as specified by Oracle in any naming convention designation.

TRADEMARKS AND LOGOS. You acknowledge and agree as between you and Oracle that Oracle owns the ORACLE and JAVA trademarks and all ORACLE- and JAVA-related trademarks, service marks, logos and other brand designations ("Oracle Marks") including the Coffee Cup and Duke, and you agree to comply with the Third Party Usage Guidelines for Oracle Trademarks currently located at

http://www.oracle.com/us/legal/third-party-trademarks/index.html . You agree to comply not do anything harmful to or inconsistent with Oracle's right in the JAVA Marks and to assist Oracle in protecting those rights, including assigning to Oracle any rights acquired by you in any Java Mark. Any use you make of the Oracle Marks inures to Oracle's benefit.

SOURCE CODE. Software may contain source code that, unless expressly licensed for other purposes, is provided solely for reference purposes pursuant to the terms of this Agreement. Source code may not be redistributed unless expressly provided for in this Agreement.

THIRD PARTY CODE. Additional copyright notices and license terms applicable to portions of the Software are set forth in the THIRDPARTYLICENSEREADME file accessible at http://www.oracle.com/technetwork/java/javase/documentation/index.html.

COMMERCIAL FEATURES. The use of the Commercial Features for any commercial or product purpose requires a separate license from Oracle. "Commercial Features" means those features identified in Table 1-1 (Commercial Features in JAVA SE Product Editions) of the Program Documentation accessible at http://www.oracle.com/technetwork/indexes/documentation/index.html.

DISCLAIMER OF WARRANTY. THE SOFTWARE IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND. ORACLE FURTHER DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT.

LIMITATION OF LIABILITY. IN NO EVENT SHALL ORACLE BE LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, OR DAMAGES FOR LOSS OF PROFITS, REVENUE, DATA OR DATA USE, INCURRED BY YOU OR ANY THIRD PARTY, WHETHER IN AN ACTION IN CONTRACT OR TORT, EVEN IF ORACLE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. ORACLE'S ENTIRE LIABILITY FOR DAMAGES HEREUNDER SHALL IN NO EVENT EXCEED ONE THOUSAND DOLLARS (U.S. \$1,000).

# Open-Source Licenses and Copyright-Statements

Barebox (barebox-custom)

License GNU General Public License, Version 2 (GPLv2)

#### Copyright

NOTE! This copyright does \*not\* cover the so-called "standalone" applications that use barebox services by means of the jump table provided by barebox exactly for this purpose - this is merely considered normal use of barebox, and does \*not\* fall under the heading of "derived work".

The header files "include/image.h" and "include/asm-\*/barebox.h" define interfaces to barebox. Including these (unmodified) header files in another file is considered normal use of barebox, and does \*not\* fall under the heading of "derived work". Also note that the GPL below is copyrighted by the Free Software Foundation, but the instance of code that it refers to (the barebox source code) is copyrighted by me and others who actually wrote it. -- Wolfgang Denk

Dr. Bruno Achauer, Guillaume Alexandre, Swen Anderson, Pantelis Antoniou, Pierre Aubert, Yuli Barcohen, Jerry van Baren, Pavel Bartusek, Andre Beaudin, Jon Benediktsson, Raphael Bossek, Cliff Brake, Rick Bronson, David Brown, Oliver Brown, Curt Brune, Jonathan De Bruyne, Ken Chou, Conn Clark, Magnus Damm, Richard Danter, George G. Davis, Arun Dharankar, Kári Davíðsson, Wolfgang Denk, Dan A. Dickey, James F. Dougherty, Dave Ellis, Thomas Elste, Daniel Engström, Dr. Wolfgang Grandegger, Peter Figuli, Thomas Frieden, Frank Gottschling, Marius Groeger, Kirk Haderlie, Chris Hallinan, Anne-Sophie Harnois, Andreas Heppel, August Hoeraendl, Josh Huber, Gary Jennejohn, Murray Jensen, Yoo. Jonghoon, Mark Jonas, Sam Song, Brad Kemp, Sangmoon Kim, Frederick W. Klatt, Thomas Koeller, Raghu Krishnaprasad, Bernhard Kuhn, Prakash Kumar, Thomas Lange, Marc Leeman, The LEOX team, Leif Lindholm, Stephan Linz, Raymond Lo, Dan Malek, Andrea "Ilandre" Marson, Reinhard Meyer, Jay Monkman, Frank Morauf, David Müller, Scott McNutt, Rolf Offermanns, John Otken, Tolunay Orkun, Keith Outwater, Frank Panno, Denis Peter, Dave Peverley, Bill Pitts, Daniel Poirot, Stefan Roese, Erwin Rol, Paul Ruhland, Neil Russell, Travis B. Sawyer, Paolo Scaffardi, Robert Schwebel, Aaron Sells, Art Shipkowski, Yasushi Shoji, Kurt Stremerch, Andrea Scian, Rob Taylor, Erik Theisen, Jim Thompson, Rune Torgersen, Greg Ungerer, David Updegraff, Christian Vejlbo, Robert Whaley, Martin Winistoerfer, Ming-Len Wu, Xianghua Xiao, John Zhan, Alex Zuepke, James MacAulay, Timur Tabi

#### BusyBox (busybox)

#### License

GNU General Public License, Version 2 (GPLv2)

#### Copyright

Peter Willis ,Emanuele Aina ,Erik Andersen ,Laurence Anderson ,Jeff Angielski ,Enrik Berkhan ,Jim Bauer ,Edward Betts ,John Beppu ,David Brownell ,Brian Candler ,Randolph Chung ,Dave Cinege ,Jordan Crouse ,Magnus Damm ,Larry Doolittle ,Glenn Engel ,Gennady Feldman ,Robert Griebl ,Karl M. Hegbloom ,Daniel Jacobowitz ,Matt Kraai ,Rob Landley ,Stephan Linz ,John Lombardo ,Glenn McGrath ,Manuel Novoa III ,Vladimir Oleynik ,Bruce Perens ,Rodney Radford, ,Tim Riker ,Kent Robotti ,Chip Rosenthal ,Pavel Roskin ,Gyepi Sam ,Rob Sullivan ,Linus Torvalds,Mark Whitley ,Charles P. Wright ,Enrique Zanardi ,Tito Ragusa ,Paul Fox ,Roberto A. Foglietta ,Bernhard Reutner-Fischer ,Mike Frysinger ,Jie Zhang

#### ifplugd

License GNU General Public License, Version 2 (GPLv2)

Copyright

Lennart Poettering

#### netfilter/iptables

License

GNU General Public License, Version 2 (GPLv2)

#### Copyright

netfilter project http://www.netfilter.org/",Netfilter Core Team,BalaBit IT Ltd.,CC Computer Consultants GmbH, Jan Engelhardt,Don Cohen,Emmanuel Roger,Evgeniy Polyakov,James Morris,Jan Engelhardt,Joakim Axelsson,Jozsef Kadlecsik,MARA Systems AB <http://www.marasystems.com> by Henrik Nordstrom,Marc Boucher,Martin Josefsson,Nokia Corporation,Nokia Corporation. Written by Timo Teras,Patrick McHardy,Patrick Schaaf,Red Hat, Inc., James Morris,Sebastian Claßen,Sven Schnelle,USAGI/WIDE Project - Masahide NAKAMURA @USAGI

# kmod

#### License

GNU General Public License, Version 2 (GPLv2) GNU Lesser General Public License, Version 2.1 (LGPLv2.1) or newer version for libkmod, testsuite and helper libraries

GNU General Public License, Version 2 (GPLv2) or newer version for tools

# Copyright

ProFUSION embedded systems, Alan Jenkins, Pedro Pedruzzi

# libdeamon

# License

GNU Lesser General Public License, Version 2.1 (LGPLv2.1)

#### Copyright

Lennart Poettering

# liblockfile

# License

GNU Library General Public License, Version 2 (LGPLv2)

#### Copyright

Miquel van Smoorenburg

# libpcap

License

# BSD 3-clause license

# Copyright

Andy Lutomirski, Atsushi Onoe, CACE Technologies, Inc. Davis (California), Carnegie Mellon, Digital Equipment Corporation, Felix Obenhuber, Free Software Foundation, Inc., Fulko Hew, SITA INC Canada, Inc, Gábor Stefanik, Jakub Zawadzki, Johannes Berg, Juniper Networks, Inc., Kungliga Tekniska Högskolan (Royal Institute of Technology, Stockholm, Sweden), Mike Kershaw, NetGroup, Politecnico di Torino (Italy), Paolo Abeni (Italy), Sam Leffler, Errno Consulting, Sebastian Krahmer, Texas A&M University, The Regents of the University of California, Torsten Landschoff, WIDE Project, Yen Yen Lim and North Dakota State University

# lighttpd

License BSD 3-clause license

# Copyright

Jan Kneschke, Elan Ruusamäe, Marcus Rückert, mOo, Robert Jakabosk, Stefan Bühler

# linux-HEAD (Linux Kernel)

License GNU General Public License, Version 2 (GPLv2)

Copyright Linus Torvalds and others, see Credits file

# lockfile\_progs

License GNU General Public Lice

GNU General Public License, Version 2 (GPLv2)

# Copyright

Rob Browning

# logrotate

License GNU General Public License, Version 2 (GPLv2)

## Copyright

Red Hat, Inc.

#### Izo

License

GNU General Public License, Version 2 (GPLv2)

#### Copyright

Markus Franz Xaver Johannes Oberhumer

## msmtp

License

GNU General Public License, Version 3 (GPLv3)

#### Copyright

Martin Lambers, Inc., X Consortium, Free Software Foundation, Inc., Ulrich Drepper, Christophe Nowicki, Eric S. Raymond

#### mtd-utils

#### License

GNU General Public License, Version 2 (GPLv2)

#### Copyright

Arcom Control Systems Ltd, Artem Bityutskiy, Ben Gardner, Christopher Clark, Daniel Industries, Inc., Daniel Measurement and Control, Inc., David A. Hinds, David Woodhouse et al., Erik Andersen, Ferenc Havasi, International Business Machines Corp., Jari Kirma, Logitech, Mike Frysinger, Nokia Corporation, Red Hat Inc., Sean Young, Steven J. Hill, Thomas Gleixner, University of Szeged, Hungary, Zoltan Sogor

#### ncurses

License MIT-style license:

------ LICENSE BEGIN ------

-----

-- Copyright (c) 1998-2004,2006 Free Software Foundation, Inc. --

--

-- Permission is hereby granted, free of charge, to any person obtaining a --

- -- copy of this software and associated documentation files (the
- -- "Software"), to deal in the Software without restriction, including --
- -- without limitation the rights to use, copy, modify, merge, publish,

-- distribute, distribute with modifications, sublicense, and/or sell copies --

- -- of the Software, and to permit persons to whom the Software is furnished --
- -- to do so, subject to the following conditions:
- --

-- The above copyright notice and this permission notice shall be included --

-- in all copies or substantial portions of the Software.

-- THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS --

-- OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF

-- MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN --

- -- NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
- -- DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR --
- -- OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE --
- -- USE OR OTHER DEALINGS IN THE SOFTWARE.
- ---
- -- Except as contained in this notice, the name(s) of the above copyright
- -- holders shall not be used in advertising or otherwise to promote the
- -- sale, use or other dealings in this Software without prior written --

-- authorization.

------ LICENSE END ------

Copyright

Free Software Foundation, Inc.

#### openssh

License and Copyright

------ LICENSE BEGIN ------

The licences which components of this software fall under are as follows. First, we will summarize and say that all components are under a BSD licence, or a licence more free than that.

OpenSSH contains no GPL code.

#### 1)

- \* Copyright (c) 1995 Tatu Ylonen <ylo@cs.hut.fi>, Espoo, Finland
- \* All rights reserved
- \*
- \* As far as I am concerned, the code I have written for this software
- \* can be used freely for any purpose. Any derived versions of this
- \* software must be clearly marked as such, and if the derived work is
- \* incompatible with the protocol description in the RFC file, it must be
- \* called by a name other than "ssh" or "Secure Shell".

#### [Tatu continues]

- \* However, I am not implying to give any licenses to any patents or
- \* copyrights held by third parties, and the software includes parts that
- \* are not under my direct control. As far as I know, all included
- \* source code is used in accordance with the relevant license agreements
- \* and can be used freely for any purpose (the GNU license being the most
- \* restrictive); see below for details.

[However, none of that term is relevant at this point in time. All of these restrictively licenced software components which he talks about have been removed from OpenSSH, i.e.,

- RSA is no longer included, found in the OpenSSL library
- IDEA is no longer included, its use is deprecated
- DES is now external, in the OpenSSL library
- GMP is no longer used, and instead we call BN code from OpenSSL
- Zlib is now external, in a library
- The make-ssh-known-hosts script is no longer included
- TSS has been removed
- MD5 is now external, in the OpenSSL library
- RC4 support has been replaced with ARC4 support from OpenSSL
- Blowfish is now external, in the OpenSSL library

[The licence continues]

Note that any information and cryptographic algorithms used in this software are publicly available on the Internet and at any major bookstore, scientific library, and patent office worldwide. More information can be found e.g. at "http://www.cs.hut.fi/crypto".

The legal status of this program is some combination of all these permissions and restrictions. Use only at your own responsibility. You will be responsible for any legal consequences yourself; I am not making any claims whether possessing or using this is legal or not in your country, and I am not taking any responsibility on your behalf.

#### NO WARRANTY

BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

2)

The 32-bit CRC compensation attack detector in deattack.c was contributed by CORE SDI S.A. under a BSD-style license.

\* Cryptographic attack detector for ssh - source code

\*

\* Copyright (c) 1998 CORE SDI S.A., Buenos Aires, Argentina.

\*

- \* All rights reserved. Redistribution and use in source and binary
- \* forms, with or without modification, are permitted provided that
- \* this copyright notice is retained.

\*

\* THIS SOFTWARE IS PROVIDED ``AS IS'' AND ANY EXPRESS OR IMPLIED

- \* WARRANTIES ARE DISCLAIMED. IN NO EVENT SHALL CORE SDI S.A. BE
- \* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY OR
- \* CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR MISUSE OF THIS
- \* SOFTWARE.
- \*
- \* Ariel Futoransky <futo@core-sdi.com>
- \* <http://www.core-sdi.com>

3)

ssh-keyscan was contributed by David Mazieres under a BSD-style

license.

- \* Copyright 1995, 1996 by David Mazieres <dm@lcs.mit.edu>.
- \*
- \* Modification and redistribution in source and binary forms is
- \* permitted provided that due credit is given to the author and the
- \* OpenBSD project by leaving this copyright notice intact.

#### 4)

The Rijndael implementation by Vincent Rijmen, Antoon Bosselaers and Paulo Barreto is in the public domain and distributed with the following license:

\* @version 3.0 (December 2000)

\*

\* Optimised ANSI C code for the Rijndael cipher (now AES)

\*

\* @author Vincent Rijmen <vincent.rijmen@esat.kuleuven.ac.be>

\* @author Antoon Bosselaers <antoon.bosselaers@esat.kuleuven.ac.be>

\* @author Paulo Barreto <paulo.barreto@terra.com.br>

\*

\* This code is hereby placed in the public domain.

\*

- \* THIS SOFTWARE IS PROVIDED BY THE AUTHORS "AS IS" AND ANY EXPRESS
- \* OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED

\* WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

- \* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE
- \* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
- \* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
- \* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
- \* BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
- \* WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
- \* OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE,

\* EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

#### 5)

One component of the ssh source code is under a 3-clause BSD license, held by the University of California, since we pulled these parts from original Berkeley code.

\* Copyright (c) 1983, 1990, 1992, 1993, 1995

- \* The Regents of the University of California. All rights reserved.
- \*
- \* Redistribution and use in source and binary forms, with or without
- \* modification, are permitted provided that the following conditions
- \* are met:
- \* 1. Redistributions of source code must retain the above copyright
- \* notice, this list of conditions and the following disclaimer.
- \* 2. Redistributions in binary form must reproduce the above copyright
- \* notice, this list of conditions and the following disclaimer in the
- \* documentation and/or other materials provided with the distribution.
- \* 3. Neither the name of the University nor the names of its contributors
- \* may be used to endorse or promote products derived from this software

- \* without specific prior written permission.
- \*
- \* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND
- \* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
- \* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
- \* ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
- \* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
- \* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
- \* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
- \* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
- \* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
- \* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
- \* SUCH DAMAGE.

#### 6)

Remaining components of the software are provided under a standard 2-term BSD licence with the following names as copyright holders:

Markus Friedl Theo de Raadt Niels Provos Dug Song Aaron Campbell Damien Miller Kevin Steves Daniel Kouril Wesley Griffin Per Allansson Nils Nordman Simon Wilkinson

Portable OpenSSH additionally includes code from the following copyright holders, also under the 2-term BSD license:

**Ben Lindstrom** Tim Rice Andre Lucas Chris Adams Corinna Vinschen Cray Inc. **Denis Parker** Gert Doering Jakob Schlyter Jason Downs Juha Yrj\F6l\E4 **Michael Stone** Networks Associates Technology, Inc. Solar Designer Todd C. Miller Wayne Schroeder William Jones Darren Tucker Sun Microsystems

The SCO Group Daniel Walsh Red Hat, Inc Simon Vallet / Genoscope

\* Redistribution and use in source and binary forms, with or without

- \* modification, are permitted provided that the following conditions \* are met:
- \* 1. Redistributions of source code must retain the above copyright
- \* notice, this list of conditions and the following disclaimer.
- \* 2. Redistributions in binary form must reproduce the above copyright
- \* notice, this list of conditions and the following disclaimer in the
- \* documentation and/or other materials provided with the distribution.
- \*
- \* THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS OR
- \* IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
- \* OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
- \* IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT,
- \* INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
- \* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
- \* DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
- \* THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
- \* (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
- \* THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

8) Portable OpenSSH contains the following additional licenses:

a) md5crypt.c, md5crypt.h

- \* "THE BEER-WARE LICENSE" (Revision 42):
- \* <phk@login.dknet.dk> wrote this file. As long as you retain this
- \* notice you can do whatever you want with this stuff. If we meet
- \* some day, and you think this stuff is worth it, you can buy me a
- \* beer in return. Poul-Henning Kamp

b) snprintf replacement

- \* Copyright Patrick Powell 1995
- \* This code is based on code written by Patrick Powell
- \* (papowell@astart.com) It may be used for any purpose as long as this
- \* notice remains intact on all source code distributions

c) Compatibility code (openbsd-compat)

Apart from the previously mentioned licenses, various pieces of code in the openbsd-compat/ subdirectory are licensed as follows:

Some code is licensed under a 3-term BSD license, to the following copyright holders:

Todd C. Miller Theo de Raadt Damien Miller Eric P. Allman The Regents of the University of California Constantin S. Svintsoff

- \* Redistribution and use in source and binary forms, with or without
- \* modification, are permitted provided that the following conditions
- \* are met:
- \* 1. Redistributions of source code must retain the above copyright
- \* notice, this list of conditions and the following disclaimer.
- \* 2. Redistributions in binary form must reproduce the above copyright
- \* notice, this list of conditions and the following disclaimer in the
- \* documentation and/or other materials provided with the distribution.
- \* 3. Neither the name of the University nor the names of its contributors
- \* may be used to endorse or promote products derived from this software
- \* without specific prior written permission.

\*

- \* THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND
- \* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
- \* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
- \* ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
- \* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
- \* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
- \* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
- \* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
- \* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
- \* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
- \* SUCH DAMAGE.

Some code is licensed under an ISC-style license, to the following copyright holders:

Internet Software Consortium. Todd C. Miller Reyk Floeter Chad Mynhier

- \* Permission to use, copy, modify, and distribute this software for any
- \* purpose with or without fee is hereby granted, provided that the above
- \* copyright notice and this permission notice appear in all copies.
- \*
- \* THE SOFTWARE IS PROVIDED "AS IS" AND TODD C. MILLER DISCLAIMS ALL
- \* WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES
- \* OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL TODD C. MILLER BE LIABLE
- \* FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES
- \* WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION
- \* OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN
- \* CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Some code is licensed under a MIT-style license to the following copyright holders:

Free Software Foundation, Inc.

\* Permission is hereby granted, free of charge, to any person obtaining a \* \* copy of this software and associated documentation files (the \* "Software"), to deal in the Software without restriction, including \* without limitation the rights to use, copy, modify, merge, publish, \* distribute, distribute with modifications, sublicense, and/or sell \* copies of the Software, and to permit persons to whom the Software is \* furnished to do so, subject to the following conditions: \* The above copyright notice and this permission notice shall be included \* \* in all copies or substantial portions of the Software. \* THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS \* \* OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF \* MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. \* \* IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, \* \* DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR \* \* OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR \* \* THE USE OR OTHER DEALINGS IN THE SOFTWARE. \* Except as contained in this notice, the name(s) of the above copyright \* \* holders shall not be used in advertising or otherwise to promote the \* sale, use or other dealings in this Software without prior written \* authorization. 

------ LICENSE END -----

#### openssl

The OpenSSL toolkit stays under a dual license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit. See below for the actual license texts. Actually both licenses are BSD-style Open Source licenses. In case of any license issues related to OpenSSL please contact openssl-core@openssl.org.

**OpenSSL** License

\* 2. Redistributions in binary form must reproduce the above copyright

- \* notice, this list of conditions and the following disclaimer in
- \* the documentation and/or other materials provided with the
- \* distribution.
- \*

\* 3. All advertising materials mentioning features or use of this

- \* software must display the following acknowledgment:
- \* "This product includes software developed by the OpenSSL Project
- \* for use in the OpenSSL Toolkit. (http://www.openssl.org/)"

\*

\* 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to

- \* endorse or promote products derived from this software without
- \* prior written permission. For written permission, please contact
- \* openssl-core@openssl.org.
- \*

\* 5. Products derived from this software may not be called "OpenSSL"

- \* nor may "OpenSSL" appear in their names without prior written
- \* permission of the OpenSSL Project.
- \*
- \* 6. Redistributions of any form whatsoever must retain the following
  \* acknowledgment:
- "This product includes software developed by the OpenSSL Project
- \* for use in the OpenSSL Toolkit (http://www.openssl.org/)"
- \*
- \* THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS'' AND ANY
- \* EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
- \* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
- \* PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR
- \* ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
- \* SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
- \* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
- \* LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
- \* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
- \* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
- \* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
- \* OF THE POSSIBILITY OF SUCH DAMAGE.

\* \_\_\_\_\_

- \*
- \* This product includes cryptographic software written by Eric Young
- \* (eay@cryptsoft.com). This product includes software written by Tim
- \* Hudson (tjh@cryptsoft.com).
- \*
- \*/

#### **Original SSLeay License**

-----

/\* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)

- \* All rights reserved.
- \*
- \* This package is an SSL implementation written
- \* by Eric Young (eay@cryptsoft.com).
- \* The implementation was written so as to conform with Netscapes SSL.

\*

\* This library is free for commercial and non-commercial use as long as

\* the following conditions are aheared to. The following conditions

\* apply to all code found in this distribution, be it the RC4, RSA,

\* Ihash, DES, etc., code; not just the SSL code. The SSL documentation

\* included with this distribution is covered by the same copyright terms

\* except that the holder is Tim Hudson (tjh@cryptsoft.com).

\*

\* Copyright remains Eric Young's, and as such any Copyright notices in

\* the code are not to be removed.

\* If this package is used in a product, Eric Young should be given attribution \* as the author of the parts of the library used.

\* This can be in the form of a textual message at program startup or

\* This can be in the form of a textual message at program startup of

\* in documentation (online or textual) provided with the package.

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\* 1. Redistributions of source code must retain the copyright

\* notice, this list of conditions and the following disclaimer.

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in the

\* documentation and/or other materials provided with the distribution.

\* 3. All advertising materials mentioning features or use of this software

\* must display the following acknowledgement:

\* "This product includes cryptographic software written by

\* Eric Young (eay@cryptsoft.com)"

\* The word 'cryptographic' can be left out if the rouines from the library

\* being used are not cryptographic related :-).

\* 4. If you include any Windows specific code (or a derivative thereof) from

\* the apps directory (application code) you must include an acknowledgement:

\* "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"

\*

\* THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS'' AND

\* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

\* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE

\* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL

\* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS

\* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)

\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT

\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY

\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF

\* SUCH DAMAGE.

\*

\* The licence and distribution terms for any publically available version or

\* derivative of this code cannot be changed. i.e. this code cannot simply be

\* copied and put under another distribution licence

\* [including the GNU Public Licence.]

\*/

------ LICENSE END ------

#### Copyright

The OpenSSL Project, Eric A. Young, Tim J. Hudson

#### openvpn

#### License

GNU General Public License, Version 2 (GPLv2)

#### Copyright

OpenVPN Technologies, Inc.

#### openvpn\_lzo

(openvpn plugin for lzo support)

#### License

GNU General Public License, Version 2 (GPLv2)

# Copyright

Markus F.X.J. Oberhumer

#### openvpn\_openssl

(openvpn plugin for openssl support)

#### License

OpenSSL License and Original SSLeay License

----- LICENSE BEGIN -----

OpenSSL License

-----

- \* Copyright (c) 1998-2011 The OpenSSL Project. All rights reserved.
- \* Redistribution and use in source and binary forms, with or without
- \* modification, are permitted provided that the following conditions
- \* are met:
- \*

\* 1. Redistributions of source code must retain the above copyright

- \* notice, this list of conditions and the following disclaimer.
- \*
- \* 2. Redistributions in binary form must reproduce the above copyright
- \* notice, this list of conditions and the following disclaimer in
- \* the documentation and/or other materials provided with the
- \* distribution.
- \*
- \* 3. All advertising materials mentioning features or use of this
- \* software must display the following acknowledgment:
- \* "This product includes software developed by the OpenSSL Project
- \* for use in the OpenSSL Toolkit. (http://www.openssl.org/)"
- \*
- \* 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to
- \* endorse or promote products derived from this software without
- \* prior written permission. For written permission, please contact
- \* openssl-core@openssl.org.
- \*
- \* 5. Products derived from this software may not be called "OpenSSL"
- \* nor may "OpenSSL" appear in their names without prior written
- \* permission of the OpenSSL Project.

\*

- \* 6. Redistributions of any form whatsoever must retain the following
- \* acknowledgment:
- \* "This product includes software developed by the OpenSSL Project
- \* for use in the OpenSSL Toolkit (http://www.openssl.org/)"
- \*
- \* THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS'' AND ANY

\* EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

\* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR

\* PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR

\* ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,

\* SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT

\* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;

\* LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)

\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,

- \* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
- \* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED

\* OF THE POSSIBILITY OF SUCH DAMAGE.

\* \_\_\_\_\_

\*

\* This product includes cryptographic software written by Eric Young

- \* (eay@cryptsoft.com). This product includes software written by Tim
- \* Hudson (tjh@cryptsoft.com).

\*

\*/

**Original SSLeay License** 

-----

- /\* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)
- \* All rights reserved.
- \*

\* This package is an SSL implementation written

- \* by Eric Young (eay@cryptsoft.com).
- \* The implementation was written so as to conform with Netscapes SSL.
- \*
- This library is free for commercial and non-commercial use as lo
- \* This library is free for commercial and non-commercial use as long as
- \* the following conditions are aheared to. The following conditions
- \* apply to all code found in this distribution, be it the RC4, RSA,
- \* Ihash, DES, etc., code; not just the SSL code. The SSL documentation
- \* included with this distribution is covered by the same copyright terms
- \* except that the holder is Tim Hudson (tjh@cryptsoft.com).
- \*
- \* Copyright remains Eric Young's, and as such any Copyright notices in
- \* the code are not to be removed.
- \* If this package is used in a product, Eric Young should be given attribution
- \* as the author of the parts of the library used.
- \* This can be in the form of a textual message at program startup or
- \* in documentation (online or textual) provided with the package.
- \* Redistribution and use in source and binary forms, with or without
- \* modification, are permitted provided that the following conditions
- \* are met:

\* 1. Redistributions of source code must retain the copyright

\* notice, this list of conditions and the following disclaimer.

- \* 2. Redistributions in binary form must reproduce the above copyright
- \* notice, this list of conditions and the following disclaimer in the
- \* documentation and/or other materials provided with the distribution.
- \* 3. All advertising materials mentioning features or use of this software
- \* must display the following acknowledgement:
- \* "This product includes cryptographic software written by
- \* Eric Young (eay@cryptsoft.com)"
- \* The word 'cryptographic' can be left out if the rouines from the library
- \* being used are not cryptographic related :-).
- \* 4. If you include any Windows specific code (or a derivative thereof) from
- \* the apps directory (application code) you must include an acknowledgement:
- \* "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"
- \*
- \* THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS'' AND
- \* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
- \* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
- \* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE
- \* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
- \* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
- \* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
- \* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
- \* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
- \* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
- \* SUCH DAMAGE.
- \*
- \* The licence and distribution terms for any publically available version or
- \* derivative of this code cannot be changed. i.e. this code cannot simply be
- \* copied and put under another distribution licence
- \* [including the GNU Public Licence.]
- \*/

------ LICENSE END ------

Copyright The OpenSSL Project

pcre

License

BSD 3-clause license

Copyright

University of Cambridge, Zoltan Herczeg, Google Inc.

#### popt

License

------ LICENSE BEGIN -----

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in

all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of the X Consortium shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from the X Consortium.

#### Copyright

Red Hat Software

#### rsync

License

GNU General Public License, Version 3 (GPLv3)

#### Copyright

Rsync was originally written by Andrew Tridgell and is currently maintained by Wayne Davison. It has been improved by many developers from around the world.

#### ser2net

License

GNU General Public License, Version 2 (GPLv2)

Copyright Corey Minyard

strace

License BSD 3-clause license

#### Copyright

Paul Kranenburg, Branko Lankester, Ulrich Pegelow, Michael Elizabeth Chastain, Rick Sladkey, Wichert Akkerman

#### tcpdump

License

BSD 3-clause license

#### Copyright

The current maintainers:

Bill Fenner <fenner at research dot att dot com>, Denis Ovsienko <denis at ovsienko dot info>, Fulvio Risso <risso at polito dot it>, Guy Harris <guy at alum dot mit dot edu>, Hannes Gredler <hannes at juniper dot net>, Michael Richardson <mcr at sandelman dot ottawa dot on dot ca>, Francois-Xavier Le Bail <fx dot lebail at yahoo dot com> For additional pople who have contributed and past maintainers see CREDITS file.

#### uboot-tools

#### License

----- LICENSE BEGIN ------

U-Boot is Free Software. It is copyrighted by Wolfgang Denk and many others who contributed code (see the actual source code for details). You can redistribute U-Boot and/or modify it under the terms of version 2 of the GNU General Public License as published by the Free Software Foundation. Most of it can also be distributed, at your option, under any later version of the GNU General Public License -- see individual files for exceptions.

NOTE! This license does \*not\* cover the so-called "standalone" applications that use U-Boot services by means of the jump table provided by U-Boot exactly for this purpose - this is merely considered normal use of U-Boot, and does \*not\* fall under the heading of "derived work".

The header files "include/image.h" and "include/asm-\*/u-boot.h" define interfaces to U-Boot. Including these (unmodified) header files in another file is considered normal use of U-Boot, and does \*not\* fall under the heading of "derived work".

Also note that the GPL below is copyrighted by the Free Software Foundation, but the instance of code that it refers to (the U-Boot source code) is copyrighted by me and others who actually wrote it. -- Wolfgang Denk

------ LICENSE END ------

GNU General Public License, Version 2 (GPLv2)

#### Copyright

Wolfgang Denk, DENX Software Engineering, wd@denx.de.

udev

#### License

GNU General Public License, Version 2 (GPLv2)

#### Copyright

Alan Jenkins, Canonical Ltd., Chris Friesen, David Zeuthen, David Zeuthen, Filippo Argiolas, Greg Kroah-Hartman, Hannes Reinecke, IBM Corp., Karel Zak, Kay Sievers, Kay Sievers, Lennart Poettering, Lennart Poettering, Martin Pitt, Maxim Levitsky, Nokia Corporation, Piter Punk, ProFUSION embedded systems, Red Hat, Inc., SUSE Linux Products GmbH, Scott James Remnant

#### Usbmount

License

BSD 2-clause license

Copyright Martin Dickopp, Rogério Brito

# util-linux

#### License

GNU General Public License, Version 2 (GPLv2) Additional information from README.licensing:

------ README.licensing BEGIN ------

The project util-linux doesn't use the same license for all of the code. There is code under:

- \* GPLv3+ (GNU General Public License version 3, or any later version)
- \* GPLv2+ (GNU General Public License version 2, or any later version)
- \* GPLv2 (GNU General Public License version 2)
- \* LGPLv2+ (GNU Lesser General Public License v2 (or 2.1) or any later version)
- \* BSD with advertising
- \* Public Domain

Please, check the source code for more details. A license is usually at the start of each source file.

The /COPYING file (GPLv2+) is the default license for code without an explicitly defined license.

------ README.licensing END ------

#### Copyright

A. V. Le Blanc, Alessandro Rubini, Andrea Arcangeli - SuSE, Andreas Dilger, Andreas Dilger and Theodore Ts'o, Andreas Neuper, Andrew Nayenko, Andries Brouwer, Andries E. Brouwer, Bastian Friedrich, Cai Qian, Corentin Chary, Davidlohr Bueso, Free Software Foundation, Inc., Frodo Looijaard, Gordon Irlam, Gunnar Ritter, H. Peter Anvin, Hajime Taira, Hayden A. James, James Youngman, Jason Borden, Jens Axboe, Jeroen Oortwijn, Karel Zak, Kay Sievers, Kevin E. Martin, Kevin E. Martin & aeb, Michael Holzt, Michael K. Johnson, Mike Hommey, Mikhail Gusarov, Nick Simicich, Red Hat Software, Red Hat, Inc., Rick Sladkey, Rickard E. Faith, Robert Love, Roy Peled, Silicon Graphics, Inc., The Regents of the University of California, Theodore Ts'o, Transmeta Corporation, UNIX System Laboratories, Inc., Werner Almesberger, Jiro SEKIBA

## Wget

License

GNU General Public License, Version 3 (GPLv3)

#### Copyright

Free Software Foundation, Inc., X Consortium, Micah J. Cowan, Internet Software Consortium, Ulrich Drepper Additional Information from AUTHORS File:

Authors of GNU Wget.

[ Note that this file does not attempt to list all the contributors to Wget; look at the ChangeLogs for that. This is a list of people who

contributed sizeable amounts of code and assigned the copyright to the FSF. ]

Hrvoje Niksic. Designed and implemented Wget.

Gordon Matzigkeit. Wrote netrc.c and netrc.h.

Darko Budor. Wrote initial support for Windows, wrote wsstartup.c,

wsstartup.h and windecl.h. (The files were later renamed, but his

code and ideas remained present.)

Junio Hamano. Added support for FTP Opie and HTTP digest authentication.

Dan Harkless. Added --backup-converted, --follow-tags, --html-extension,

--ignore-tags, and --page-requisites; improved documentation; etc. Was

the principle maintainer of GNU Wget for some time.

Christian Fraenkel. Initially implemented SSL support.

Thomas Lussnig. Initially implemented IPv6 support.

Ian Abbott. Contributed bugfixes, Windows-related fixes, provided a

prototype implementation of the new recursive code, and more.

Co-maintained Wget during the 1.8 release cycle.

Gisle Vanem. Contributed Windows and MS-DOS improvements, including a port of run\_with\_timeout to Windows, additions to Makefiles, and many bug reports and fixes.

Mauro Tortonesi. Improved IPv6 support, adding support for dual family systems. Refactored and enhanced FTP IPv6 code. Maintained GNU Wget from 2004-2007.

Nicolas Schodet. Contributed to cookie code and documentation.

Daniel Stenberg. NTLM authentication in http-ntlm.c and http-ntlm.h originally written for curl donated for use in GNU Wget.

Micah Cowan. Maintained Wget from mid-2007 to mid-2010.

Ralf Wildenhues. Contributed patches to convert Wget to use Automake as part of its build process, and various bugfixes.

Steven Schubiger. Many helpful patches, bugfixes and improvements. Notably, conversion of Wget to use the Gnulib quotes and quoteargs modules, and the addition of password prompts at the console, via the Gnulib getpasswd-gnu module. Ted Mielczarek. Support for parsing links from CSS. Saint Xavier. Support for IRIs (RFC 3987). Giuseppe Scrivano. Added support for HTTP/1.1. Current Wget maintainer.

Zlib

License "zlib License" (C) 1995-2012 Jean-loup Gailly and Mark Adler

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

- 1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
- 2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
- 3. This notice may not be removed or altered from any source distribution.

Jean-loup Gailly Mark Adler jloup@gzip.org

madler@alumni.caltech.edu

Copyright

Jean-loup Gailly, Mark Adler

Glibc

License

GNU Lesser General Public License, Version 2.1 (LGPLv2.1)

Copyright

Free Software Foundation, Inc.

## GCC

(Only usage of runtime libraries, dynamic linker etc.)

License

GNU General Public License, Version 3 (GPLv3) with GCC Runtime Library Exception, Version 3.1

#### Copyright

Free Software Foundation, Inc.

## XmlRpc++

License

GNU Lesser General Public License, Version 2.1 (LGPLv2.1)

Copyright

Chris Morley, eQ-3 Entwicklung GmbH

## daemonize

License **BSD-style license:**  ------ LICENSE BEGIN ------Copyright (c) 2003-2007 Brian M. Clapper. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the clapper.org nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

------ LICENSE END ------

#### Copyright

Brian M. Clapper

#### ntpclient

License GNU General Public License, Version 2 (GPLv2) Copyright Larry Doolittle

Tcl/Tk

#### License

This software is copyrighted by the Regents of the University of California, Sun Microsystems, Inc., Scriptics Corporation, and other parties. The following terms apply to all files associated with the software unless explicitly disclaimed in individual files.

The authors hereby grant permission to use, copy, modify, distribute, and license this software and its documentation for any purpose, provided that existing copyright notices are retained in all copies and that this notice is included verbatim in any distributions. No written agreement, license, or royalty fee is required for any of the authorized uses. Modifications to this software may be copyrighted by their authors and need not follow the licensing terms described here, provided that the new terms are clearly indicated on the first page of each file where they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. THIS SOFTWARE IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the U.S. government, the Government shall have only "Restricted Rights" in the software and related documentation as defined in the Federal Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2). If you are acquiring the software on behalf of the Department of Defense, the software shall be classified as "Commercial Computer Software" and the Government shall have only "Restricted Rights" as defined in Clause 252.227-7013 (c) (1) of DFARs. Notwithstanding the foregoing, the authors grant the U.S. Government and others acting in its behalf permission to use and distribute the software in accordance with the terms specified in this license.

#### Copyright:

The Regents of the University of California, Dave Nebinger, Free Software Foundation, Inc., General Electric Company, Henry Spencer, Jens-Uwe Mager, Helios Software GmbH, Karl Lehenbauer and Mark Diekhans, Lockheed Missle & Space Company, Al Center, Lucent Technologies, Inc., Mark Harrison, Paul Duffin, Roger E. Critchlow Jr, Scriptics Corporation, Sun Microsystems, Inc

#### Tcllib

#### License

This software is copyrighted by Ajuba Solutions and other parties. The following terms apply to all files associated with the software unless explicitly disclaimed in individual files.

The authors hereby grant permission to use, copy, modify, distribute, and license this software and its documentation for any purpose, provided that existing copyright notices are retained in all copies and that this notice is included verbatim in any distributions. No written agreement, license, or royalty fee is required for any of the authorized uses. Modifications to this software may be copyrighted by their authors and need not follow the licensing terms described here, provided that the new terms are clearly indicated on the first page of each file where they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. THIS SOFTWARE IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the U.S. government, the Government shall have only "Restricted Rights" in the software and related documentation as defined in the Federal Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2). If you are acquiring the software on behalf of the Department of Defense, the software shall be classified as "Commercial Computer Software" and the Government shall have only "Restricted Rights" as defined in Clause 252.227-7013 (c) (1) of DFARs. Notwithstanding the foregoing, the authors grant the U.S. Government and others acting in its behalf permission to use and distribute the software in accordance with the terms specified in this license.

#### Copyright

Ajuba Solutions, Aaron Faupell, ActiveState Corporation, ActiveState Tool Corp., Andreas Kupries, Arjen Markus., Bernd Raichle/DANTE e.V., Brett Schwarz, Claudio Beccari, Colin McCormack, David N. Welton, Dr. Johannes-Heinrich Vogeler, Edwin A. Suominen, Emmanuel Frecon, Free Software Foundation, Inc., Ideogramic ApS and other parties, Jean-Luc Fontaine, Jef Poskanzer, Jeffrey Hobbs, Jochen C. Loewer, Joe English, Keith Vetter, Kevin B. Kenny, Michael Schlenker, Pat Thoyts, Patrick Thoyts, Phil Ehrens, RSA Data Security, Inc., RSA Laboratories, a division of RSA, Rechenzentrum der Ruhr-Universitaet Bochum, Reinhard Max, Ross Palmer Mohn., Salvatore Sanfilippo, Scott Beasley, Steffen Traeger, Sun Microsystems, The Internet Society, The Open Group, Widget Workshop, Inc., William H. Duquette, Zveno Pty Ltd

#### yaku-ns

#### License

GNU General Public License, Version 2 (GPLv2)

#### Copyright

Salvatore Sanfilippo, Todd C. Miller, Digital Equipment Corporation, "International Business Machines, Inc."

#### Xmlparser

#### License

GNU Lesser General Public License, Version 2.1 (LGPLv2.1)

#### Copyright

Frank Vanden Berghen, based on original implementation by Martyn C Brown

#### ic200-spi

#### License

GNU General Public License, Version 3 (GPLv3)

#### Copyright Enrico Scholz

# script.aculo.us

License MIT-style license:

Copyright © 2005-2008 Thomas Fuchs (http://script.aculo.us, http://mir.aculo.us)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

#### Copyright

Thomas Fuchs, Marty Haught, Jon Tirsen, Michael Schuerig, Sammi Williams

#### ExploreCanvas

License Apache License, Version 2.0

Copyright Google Inc.

#### jqPlot

License The MIT License (MIT)

Copyright Chris Leonello

#### jQuery blockUI Plugin

License Dual licensed under The MIT License (MIT) and GNU General Public License (GPL) Copyright M. Alsup MS DropDown

License The MIT License (MIT) Copyright Marghoob Suleman

#### jQuery Form Plugin

License

Dual licensed under The MIT License (MIT) and GNU General Public License, Version 2 (GPLv2) Copyright M. Alsup

#### jqPlot jQuery plugin

#### License

Dual licensed under The MIT License (MIT) and GNU General Public License, Version 2 (GPLv2) Copyright

Francois Gelinas

## jQuery

License The MIT License (MIT)

Copyright jQuery Foundation and other contributors

PowerTip

License The MIT License (MIT) Copyright Steven Benner

## jQuery UI

License The MIT License (MIT) Copyright Copyright jQuery Foundation and other contributors

#### jQuery UI Timepicker

License The MIT License (MIT) Copyright Francois Gelinas JQuery URL Parser plugin

# License MIT style license: Copyright (c) 2012 Mark Perkins, http://allmarkedup.com/

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright

Mark Perkins

json2.js

License Public Domain

Copyright Douglas Crockford Knockout JavaScript Library

License The MIT License (MIT) Copyright Steven Sanderson, the Knockout.js team, and other contributors

## LESS - Leaner CSS

License Apache License, Version 2.0

Copyright Alexis Sellier and the Less Core Team

#### nfs\_datepicker

License **The MIT License (MIT)** Copyright **Julian Robichaux** Prototype JavaScript framework

#### License

MIT-style license: Prototype is Copyright © 2005-2007 <u>Sam Stephenson</u>. It is freely distributable under the terms of an MIT-style license. Copyright (c) 2005-2010 Sam Stephenson

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright Sam Stephenson

## Tigra Slider Control

#### License

"The script is absolutely free with no strings attached"

#### Copyright

SoftComplex Inc. (http://www.softcomplex.com/products/tigra\_slider\_control/)

#### Spectrum

License

The MIT License (MIT)

Copyright Brian Grinstead

#### TrimPath Template

License: GNU General Public License, Version 2 (GPLv2) and Apache License, Version 2.0

# Copyright

TrimPath

#### jsGraphics

#### License

GNU Lesser General Public License, Version 2.1 (LGPLv2.1)

# Copyright

Walter Zorn

#### cgi.tcl

cgi.tcl - routines for writing CGI scripts in Tcl

License

Public Domain

## Copyright

#### \*\*\*\*\*

# 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

License Tcl/Tk License

This software is copyrighted by the Regents of the University of California, Sun Microsystems, Inc., Scriptics Corporation, and other parties. The following terms apply to all files associated with the software unless explicitly disclaimed in individual files.

The authors hereby grant permission to use, copy, modify, distribute, and license this software and its documentation for any purpose, provided that existing copyright notices are retained in all copies and that this notice is included verbatim in any distributions. No written agreement, license, or royalty fee is required for any of the authorized uses. Modifications to this software may be copyrighted by their authors and need not follow the licensing terms described here, provided that the new terms are clearly indicated on the first page of each file where they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. THIS SOFTWARE IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the U.S. government, the Government shall have only "Restricted Rights" in the software and related documentation as defined in the Federal Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2). If you are acquiring the software on behalf of the Department of Defense, the software shall be classified as "Commercial Computer Software" and the Government shall have only "Restricted Rights" as defined in Clause 252.227-7013 (c) (1) of DFARs. Notwithstanding the foregoing, the authors grant the U.S. Government and others acting in its behalf permission to use and distribute the software in accordance with the terms specified in this license.

#### Copyright

Kanryu KATO # tmpl\_parser.tcl # # Tcl embeddedd script parser(a template engine) # # This module converts Tcl embedded scripts into a Tcl normal script(parser), # after you just have to do eval command for the generated parser. # # Copyright (c) 2007 by Kanryu KATO<k.kanryu@gmail.com> # licensed on Tcl License. # # Modified by F. Werner (eQ-3 Entwicklung GmbH): # - require Tcl 8.2 instead of 8.3 Javascript MD5 License ------ LICENSE BEGIN ------

Copyright (c) 1998 - 2009, Paul Johnston & Contributors All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of the author nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

------ LICENSE END ------

## Copyright

/\*

- \* A JavaScript implementation of the RSA Data Security, Inc. MD5 Message
- \* Digest Algorithm, as defined in RFC 1321.
- \* Version 2.1 Copyright (C) Paul Johnston 1999 2002.
- \* Other contributors: Greg Holt, Andrew Kepert, Ydnar, Lostinet
- \* Distributed under the BSD License
- \* See http://pajhome.org.uk/crypt/md5 for more info.
- \*
- \* Converted to use within the iseGateway environment
- \* by Alexander Schleifer, ise GmbH, http://www.ise.de
- \*
- \*/

## HMIPServer

HMIPServer itself is not Open Source software (OSS), but makes use of Open Source Software libraries. Please note the list of OSS used by HMIPServer as well as their particular licenses in the following.

(Public Domain) AOP alliance (aopalliance:aopalliance:1.0 - http://aopalliance.sourceforge.net) (Bouncy Castle License) Legion of the Bouncy Castle Java Cryptography APIs (bouncycastle:bcprov-jdk16:140 - http://www.bouncycastle.org/java.html)

(New BSD License) Kryo (com.esotericsoftware.kryo:kryo:2.22 - http://code.google.com/p/kryo/)

(The Apache Software License, Version 2.0) Jackson-annotations (com.fasterxml.jackson.core:jackson-annotations:2.7.0 - http://github.com/FasterXML/jackson)

(The Apache Software License, Version 2.0) Jackson-core (com.fasterxml.jackson.core:jackson-core:2.7.4 - https://github.com/FasterXML/jackson-core)

(The Apache Software License, Version 2.0) jackson-databind (com.fasterxml.jackson.core:jackson-databind:2.7.4 - http://github.com/FasterXML/jackson)

(The Apache Software License, Version 2.0) Jackson-dataformat-XML (com.fasterxml.jackson.dataformat:jackson-dataformat-xml:2.7.4 - http://wiki.fasterxml.com/JacksonExtensionXmlDataBinding)

(The Apache Software License, Version 2.0) Jackson-module-JAXB-annotations

(com.fasterxml.jackson.module:jackson-module-jaxb-annotations:2.7.4 - http://github.com/FasterXML/jackson-module-jaxb-annotations)

(The Apache Software License, Version 2.0) Gson (com.google.code.gson:gson:2.2.4 -

http://code.google.com/p/google-gson/)

(Apache 2.0) Gson (com.google.code.gson:gson:2.7 - https://github.com/google/gson/gson)

(The Apache Software License, Version 2.0) Guava: Google Core Libraries for Java (com.google.guava:guava:19.0 - https://github.com/google/guava/guava)

(The Apache Software License, Version 2.0) Google Guice - Core Library (com.google.inject:guice:3.0 - http://code.google.com/p/google-guice/guice/)

(The Apache Software License, Version 2.0) Apache Commons Codec (commons-codec:commons-codec:1.9 - http://commons.apache.org/proper/commons-codec/)

(The Apache Software License, Version 2.0) Apache Commons Collections (commons-collections:commons-collections:3.2.2 - http://commons.apache.org/collections/)

(The Apache Software License, Version 2.0) Commons IO (commons-io:commons-io:2.4 -

http://commons.apache.org/io/)

(The Apache Software License, Version 2.0) Apache Commons IO (commons-io:commons-io:2.5 - http://commons.apache.org/proper/commons-io/)

(The Apache Software License, Version 2.0) Commons Lang (commons-lang:commons-lang:2.6 - http://commons.apache.org/lang/)

(The Apache Software License, Version 2.0) Apache Commons Logging (commons-logging:commons-logging:1.2 - http://commons.apache.org/proper/commons-logging/)

(The Apache Software License, Version 2.0) Commons Net (commons-net:commons-net:3.3 -

http://commons.apache.org/proper/commons-net/)

(The Apache Software License, Version 2.0) Netty/Buffer (io.netty:netty-buffer:4.1.8.Final - http://netty.io/netty-buffer/)

(The Apache Software License, Version 2.0) Netty/Codec (io.netty:netty-codec:4.1.8.Final - http://netty.io/netty-codec/)

(The Apache Software License, Version 2.0) Netty/Codec/DNS (io.netty:netty-codec-dns:4.1.8.Final - http://netty.io/netty-codec-dns/)

(The Apache Software License, Version 2.0) Netty/Codec/HTTP (io.netty:netty-codec-http:4.1.8.Final - http://netty.io/netty-codec-http/)

(The Apache Software License, Version 2.0) Netty/Codec/HTTP2 (io.netty:netty-codec-http2:4.1.8.Final - http://netty.io/netty-codec-http2/)

(The Apache Software License, Version 2.0) Netty/Codec/Socks (io.netty:netty-codec-socks:4.1.8.Final - http://netty.io/netty-codec-socks/)

(The Apache Software License, Version 2.0) Netty/Common (io.netty:netty-common:4.1.8.Final - http://netty.io/netty-common/)

(The Apache Software License, Version 2.0) Netty/Handler (io.netty:netty-handler:4.1.8.Final - http://netty.io/netty-handler/)

(The Apache Software License, Version 2.0) Netty/Handler/Proxy (io.netty:netty-handler-proxy:4.1.8.Final - http://netty.io/netty-handler-proxy/)

(The Apache Software License, Version 2.0) Netty/Resolver (io.netty:netty-resolver:4.1.8.Final - http://netty.io/netty-resolver/)

(The Apache Software License, Version 2.0) Netty/Resolver/DNS (io.netty:netty-resolver-dns:4.1.8.Final - http://netty.io/netty-resolver-dns/)

(The Apache Software License, Version 2.0) Netty/Transport (io.netty:netty-transport:4.1.8.Final - http://netty.io/netty-transport/)

(Eclipse Public License - v 1.0) (The Apache Software License, Version 2.0) vertx-auth-common (io.vertx:vertx-auth-common:3.4.1 - http://nexus.sonatype.org/oss-repository-hosting.html/vertx-parent/vertx-ext/vertx-ext-parent/vertx-auth-common)

(Eclipse Public License - v 1.0) (The Apache Software License, Version 2.0) Vert.x Core (io.vertx:vertx-core:3.4.1 - http://nexus.sonatype.org/oss-repository-hosting.html/vertx-parent/vertx-core)

(Eclipse Public License - v 1.0) (The Apache Software License, Version 2.0) vertx-web (io.vertx:vertx-web:3.4.1 - http://nexus.sonatype.org/oss-repository-hosting.html/vertx-parent/vertx-ext/vertx-ext-parent/vertx-web-parent/vertx-web)

(The Apache Software License, Version 2.0) javax.inject (javax.inject:javax.inject:1 -

http://code.google.com/p/atinject/)

(Common Public License Version 1.0) JUnit (junit:junit:4.11 - http://junit.org)

(The Apache Software License, Version 2.0) Apache Log4j (log4j:log4j:1.2.17 -

http://logging.apache.org/log4j/1.2/)

(Apache 2) opencsv (net.sf.opencsv:opencsv:2.3 - http://opencsv.sf.net)

(The Apache Software License, Version 2.0) Apache Commons Lang (org.apache.commons:commons-lang3:3.2.1 - http://commons.apache.org/proper/commons-lang/)

(The Apache Software License, Version 2.0) Apache HttpClient (org.apache.httpcomponents:httpclient:4.5.2 - http://hc.apache.org/httpcomponents-client)

(The Apache Software License, Version 2.0) Apache HttpCore (org.apache.httpcomponents:httpcore:4.4.4 - http://hc.apache.org/httpcomponents-core-ga)

(The Apache License, Version 2.0) NRJavaSerial (org.bidib.com.neuronrobotics:nrjavaserial:3.12.0 - http://neuronrobotics.com)

(The BSD License) Stax2 API (org.codehaus.woodstox:stax2-api:3.1.4 - http://wiki.fasterxml.com/WoodstoxStax2) (Apache Software License - Version 2.0) (Eclipse Public License - Version 1.0) Jetty :: Asynchronous HTTP Client (org.eclipse.jetty:jetty-client:9.4.7.v20170914 - http://www.eclipse.org/jetty)

(Apache Software License - Version 2.0) (Eclipse Public License - Version 1.0) Jetty :: Http Utility

(org.eclipse.jetty:jetty-http:9.4.7.v20170914 - http://www.eclipse.org/jetty)

(Apache Software License - Version 2.0) (Eclipse Public License - Version 1.0) Jetty :: IO Utility

(org.eclipse.jetty:jetty-io:9.4.7.v20170914 - http://www.eclipse.org/jetty)

(Apache Software License - Version 2.0) (Eclipse Public License - Version 1.0) Jetty :: Utilities

(org.eclipse.jetty:jetty-util:9.4.7.v20170914 - http://www.eclipse.org/jetty)

(The Apache Software License, Version 2.0) Apache FreeMarker (org.freemarker:freemarker-gae:2.3.26-incubating - http://freemarker.org/)

(New BSD License) Hamcrest Core (org.hamcrest:hamcrest-core:1.3 -

https://github.com/hamcrest/JavaHamcrest/hamcrest-core)

(The Apache Software License, Version 2.0) JmDNS (org.jmdns:jmdns:3.5.1 - http://jmdns.org)

(Common Development and Distribution License 1.0) org.jupnp (org.jupnp:org.jupnp:2.2.0 - no url defined)

(The Apache Software License, Version 2.0) mapdb (org.mapdb:mapdb:1.0.9 - http://www.mapdb.org)

(The Apache Software License, Version 2.0) (please note remarks below) rrd4j-ccu2 (org.rrd4j:rrd4j-ccu2:3.1 - no url defined)

(MIT License) SLF4J API Module (org.slf4j:slf4j-api:1.7.16 - http://www.slf4j.org)

(MIT License) SLF4J API Module (org.slf4j:slf4j-api:1.7.21 - http://www.slf4j.org)

(MIT License) SLF4J API Module (org.slf4j:slf4j-api:1.7.22 - http://www.slf4j.org)

(MIT License) SLF4J LOG4J-12 Binding (org.slf4j:slf4j-log4j12:1.7.22 - http://www.slf4j.org)

(Apache Software License) JTar (org.xeustechnologies:jtar:1.1 - http://nexus.sonatype.org/oss-repository-hosting.html/jtar)

(Public Domain) DejaVu Fonts (see below for license and copyright remarks)

RRD4J License:

------

/\*

\* Copyright 2011 The RRD4J Authors.

\* Licensed under the Apache License, Version 2.0 (the "License"); you may not

\* use this file except in compliance with the License. You may obtain a copy of

- \* the License at
- \*

\* http://www.apache.org/licenses/LICENSE-2.0

\*

\* Unless required by applicable law or agreed to in writing, software

\* distributed under the License is distributed on an "AS IS" BASIS, WITHOUT

\* WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the

\* License for the specific language governing permissions and limitations under

\* the License.

\*/

//Original JRobin Code Base:

\* Copyright (c) 2001-2005 Sasa Markovic and Ciaran Treanor.

\* Copyright (c) 2011 The OpenNMS Group, Inc.

\*

\* This library is free software; you can redistribute it and/or

\* modify it under the terms of the GNU Lesser General Public

\* License as published by the Free Software Foundation; either

\* version 2.1 of the License, or (at your option) any later version.

\*

\* This library is distributed in the hope that it will be useful,

\* but WITHOUT ANY WARRANTY; without even the implied warranty of

\* MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU

- \* Lesser General Public License for more details.
- \*

Variabauld have reactived a convert the CNUL losser Constal

\* You should have received a copy of the GNU Lesser General Public
\* License along with this library; if not, write to the Free Software

\* Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA

02110-1301 USA

-----

DejaVu Fonts - License:

Fonts are (c) Bitstream (see below). DejaVu changes are in public domain. Glyphs imported from Arev fonts are (c) Tavmjong Bah (see below)

Bitstream Vera Fonts Copyright

-----

Copyright (c) 2003 by Bitstream, Inc. All Rights Reserved. Bitstream Vera is a trademark of Bitstream, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of the fonts accompanying this license ("Fonts") and associated documentation files (the "Font Software"), to reproduce and distribute the Font Software, including without limitation the rights to use, copy, merge, publish, distribute, and/or sell copies of the Font Software, and to permit persons to whom the Font Software is furnished to do so, subject to the following conditions:

The above copyright and trademark notices and this permission notice shall be included in all copies of one or more of the Font Software typefaces.

The Font Software may be modified, altered, or added to, and in particular the designs of glyphs or characters in the Fonts may be modified and additional glyphs or characters may be added to the Fonts, only if the fonts are renamed to names not containing either the words "Bitstream" or the word "Vera".

This License becomes null and void to the extent applicable to Fonts or Font Software that has been modified and is distributed under the "Bitstream Vera" names.

The Font Software may be sold as part of a larger software package but no copy of one or more of the Font Software typefaces may be sold by itself.

THE FONT SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF COPYRIGHT, PATENT, TRADEMARK, OR OTHER RIGHT. IN NO EVENT SHALL BITSTREAM OR THE GNOME FOUNDATION BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, INCLUDING ANY GENERAL, SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF THE USE OR INABILITY TO USE THE FONT SOFTWARE OR FROM OTHER DEALINGS IN THE FONT SOFTWARE.

Except as contained in this notice, the names of Gnome, the Gnome Foundation, and Bitstream Inc., shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Font Software without prior written authorization from the Gnome Foundation or Bitstream Inc., respectively. For further information, contact: fonts at gnome dot org.

#### Arev Fonts Copyright

\_\_\_\_\_

Copyright (c) 2006 by Tavmjong Bah. All Rights Reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of the fonts accompanying this license ("Fonts") and associated documentation files (the "Font Software"), to reproduce and distribute the modifications to the Bitstream Vera Font Software, including without limitation the rights to use, copy, merge, publish, distribute, and/or sell copies of the Font Software, and to permit persons to whom the Font Software is furnished to do so, subject to the following conditions:

The above copyright and trademark notices and this permission notice shall be included in all copies of one or more of the Font Software typefaces.

The Font Software may be modified, altered, or added to, and in particular the designs of glyphs or characters in the Fonts may be modified and additional glyphs or characters may be added to the Fonts, only if the fonts are renamed to names not containing either the words "Tavmjong Bah" or the word "Arev".

This License becomes null and void to the extent applicable to Fonts or Font Software that has been modified and is distributed under the "Tavmjong Bah Arev" names.

The Font Software may be sold as part of a larger software package but no copy of one or more of the Font Software typefaces may be sold by itself.

THE FONT SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF COPYRIGHT, PATENT, TRADEMARK, OR OTHER RIGHT. IN NO EVENT SHALL TAVMJONG BAH BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, INCLUDING ANY GENERAL, SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF THE USE OR INABILITY TO USE THE FONT SOFTWARE OR FROM OTHER DEALINGS IN THE FONT SOFTWARE.

Except as contained in this notice, the name of Tavmjong Bah shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Font Software without prior written authorization from Tavmjong Bah. For further information, contact: tavmjong @ free . fr.

#### TeX Gyre DJV Math

-----

Fonts are (c) Bitstream (see below). DejaVu changes are in public domain.

Math extensions done by B. Jackowski, P. Strzelczyk and P. Pianowski (on behalf of TeX users groups) are in public domain.

Letters imported from Euler Fraktur from AMSfonts are (c) American Mathematical Society (see below). Bitstream Vera Fonts Copyright Copyright (c) 2003 by Bitstream, Inc. All Rights Reserved. Bitstream Vera is a trademark of Bitstream, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of the fonts accompanying this license ("Fonts") and associated documentation files (the "Font Software"), to reproduce and distribute the Font Software, including without limitation the rights to use, copy, merge, publish, distribute,

and/or sell copies of the Font Software, and to permit persons to whom the Font Software is furnished to do so, subject to the following conditions:

The above copyright and trademark notices and this permission notice shall be

included in all copies of one or more of the Font Software typefaces.

The Font Software may be modified, altered, or added to, and in particular the designs of glyphs or characters in the Fonts may be modified and additional

glyphs or characters may be added to the Fonts, only if the fonts are renamed

to names not containing either the words "Bitstream" or the word "Vera".

This License becomes null and void to the extent applicable to Fonts or Font Software

that has been modified and is distributed under the "Bitstream Vera" names.

The Font Software may be sold as part of a larger software package but no copy

of one or more of the Font Software typefaces may be sold by itself.

THE FONT SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF COPYRIGHT, PATENT, TRADEMARK, OR OTHER RIGHT. IN NO EVENT SHALL BITSTREAM OR THE GNOME FOUNDATION

BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, INCLUDING ANY GENERAL, SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER IN AN ACTION

OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF THE USE OR INABILITY TO USE

THE FONT SOFTWARE OR FROM OTHER DEALINGS IN THE FONT SOFTWARE. Except as contained in this notice, the names of GNOME, the GNOME Foundation,

and Bitstream Inc., shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Font Software without prior written authorization from the GNOME Foundation or Bitstream Inc., respectively. For further information, contact: fonts at gnome dot org.

AMSFonts (v. 2.2) copyright

The PostScript Type 1 implementation of the AMSFonts produced by and previously distributed by Blue Sky Research and Y&Y, Inc. are now freely available for general use. This has been accomplished through the cooperation

of a consortium of scientific publishers with Blue Sky Research and Y&Y. Members of this consortium include:

Elsevier Science IBM Corporation Society for Industrial and Applied Mathematics (SIAM) Springer-Verlag American Mathematical Society (AMS)

In order to assure the authenticity of these fonts, copyright will be held by

the American Mathematical Society. This is not meant to restrict in any way the legitimate use of the fonts, such as (but not limited to) electronic distribution of documents containing these fonts, inclusion of these fonts into other public domain or commercial font collections or computer applications, use of the outline data to create derivative fonts and/or faces, etc. However, the AMS does require that the AMS copyright notice be removed from any derivative versions of the fonts which have been altered in any way. In addition, to ensure the fidelity of TeX documents using Computer Modern fonts, Professor Donald Knuth, creator of the Computer Modern faces, has requested that any alterations which yield different font metrics be given a different name.

#### Licenses

GNU General Public License (GPL)

GNU GENERAL PUBLIC LICENSE Version 1, February 1989

Copyright (C) 1989 Free Software Foundation, Inc. 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The license agreements of most software companies try to keep users at the mercy of those companies. By contrast, our General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. The General Public License applies to the Free Software Foundation's software and to any other program whose authors commit to using it. You can use it for your programs, too.

When we speak of free software, we are referring to freedom, not price. Specifically, the General Public License is designed to make sure that you have the freedom to give away or sell copies of free software, that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of a such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must tell them their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any work containing the Program or a portion of it, either verbatim or with modifications. Each licensee is addressed as "you".

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this General Public License and to the absence of any warranty; and give any other recipients of the Program a copy of this General Public License along with the Program. You may charge a fee for the physical act of transferring a copy.

2. You may modify your copy or copies of the Program or any portion of it, and copy and distribute such modifications under the terms of Paragraph 1 above, provided that you also do the following:

a) cause the modified files to carry prominent notices stating that you changed the files and the date of any change; and

b) cause the whole of any work that you distribute or publish, that in whole or in part contains the Program or any part thereof, either with or without modifications, to be licensed at no charge to all third parties under the terms of this General Public License (except that you may choose to grant warranty protection to some or all third parties, at your option).

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 that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this General Public License.

d) You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

Mere aggregation of another independent work with the Program (or its derivative) on a volume of a storage or distribution medium does not bring the other work under the scope of these terms.

3. You may copy and distribute the Program (or a portion or derivative of it, under Paragraph 2) in object code or executable form under the terms of Paragraphs 1 and 2 above provided that you also do one of the following:

a) accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Paragraphs 1 and 2 above; or,

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 libraries that accompany the operating system on which the executable file runs, or for standard header files or definitions files that accompany that operating system.

4. You may not copy, modify, sublicense, distribute or transfer the Program except as expressly provided under this General Public License. Any attempt otherwise to copy, modify, sublicense, distribute or transfer the Program is void, and will automatically terminate your rights to use the Program under this License. However, parties who have received copies, or rights to use copies, from you under this General Public License will not have their licenses terminated so long as such parties remain in full compliance.

5. By copying, distributing or modifying the Program (or any work based on the Program) you indicate your acceptance of this license to do so, and all its terms and conditions.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein.

7. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of the license which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the license, you may choose any version ever published by the Free Software Foundation.

8. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

9. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

10. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

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>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 1, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston MA 02110-1301 USA

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)

GNU GENERAL PUBLIC LICENSE Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it. For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

# GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

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

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

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, 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 Program, 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 Program.

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

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readablesource code, which must be distributed under the terms of Sections1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. 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.

If distribution of executable or 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 counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

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 the public, 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) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

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) year 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 is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

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

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

GNU General Public License, Version 3 (GPLv3)

GNU GENERAL PUBLIC LICENSE Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <a href="http://fsf.org/">http://fsf.org/</a>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free. The precise terms and conditions for copying, distribution and modification follow.

#### TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If 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 interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (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 the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures. 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as

part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that

material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so. 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General

Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

## END OF TERMS AND CONDITIONS

## 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 the public, 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 state 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) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

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

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

<program> Copyright (C) <year> <name of author> This program 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, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <a href="http://www.gnu.org/licenses/">http://www.gnu.org/licenses/</a>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

GNU Library General Public License, Version 2 (LGPLv2)

GNU LIBRARY GENERAL PUBLIC LICENSE Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc. 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is numbered 2 because it goes with version 2 of the ordinary GPL.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some

specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for your libraries, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis 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 code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better. However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

# GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

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 copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy,

and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

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 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 the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance. 9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library

specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. 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 library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful,

but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

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

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

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990 Ty Coon, President of Vice

That's all there is to it!

GNU Lesser General Public License, Version 2.1 (LGPLv2.1)

GNU LESSER GENERAL PUBLIC LICENSE Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc. 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it. For example, if you distribute copies of the library, whether gratis 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 code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less 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 that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

# GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

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 copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1

above, provided that you also meet all of these conditions:

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 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 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 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) 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 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 the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. 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 library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version. This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

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

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

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990 Ty Coon, President of Vice

That's all there is to it!

GNU Lesser General Public License, Version 3 (LGPLv3)

GNU GENERAL PUBLIC LICENSE Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/> Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other

parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If 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 interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (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 the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

## 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law. You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided

you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11). However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims

owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS

THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

#### END OF TERMS AND CONDITIONS

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 the public, 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 state 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) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

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

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

<program> Copyright (C) <year> <name of author> This program 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, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see

<http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

# GCC Runtime Library Exception, Version 3.1 GCC RUNTIME LIBRARY EXCEPTION

Version 3.1, 31 March 2009

Copyright (C) 2009 Free Software Foundation, Inc. < http://fsf.org/>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This GCC Runtime Library Exception ("Exception") is an additional permission under section 7 of the GNU General Public License, version 3 ("GPLv3"). It applies to a given file (the "Runtime Library") that bears a notice placed by the copyright holder of the file stating that the file is governed by GPLv3 along with this Exception.

When you use GCC to compile a program, GCC may combine portions of certain GCC header files and runtime libraries with the compiled program. The purpose of this Exception is to allow compilation of non-GPL (including proprietary) programs to use, in this way, the header files and runtime libraries covered by this Exception.

## 0. Definitions.

A file is an "Independent Module" if it either requires the Runtime Library for execution after a Compilation Process, or makes use of an interface provided by the Runtime Library, but is not otherwise based on the Runtime Library.

"GCC" means a version of the GNU Compiler Collection, with or without modifications, governed by version 3 (or a specified later version) of the GNU General Public License (GPL) with the option of using any subsequent versions published by the FSF.

"GPL-compatible Software" is software whose conditions of propagation, modification and use would permit combination with GCC in accord with the license of GCC.

"Target Code" refers to output from any compiler for a real or virtual target processor architecture, in executable form or suitable for input to an assembler, loader, linker and/or execution phase. Notwithstanding that, Target Code does not include data in any format that is used as a compiler intermediate representation, or used for producing a compiler intermediate representation. The "Compilation Process" transforms code entirely represented in non-intermediate languages designed for human-written code, and/or in Java Virtual Machine byte code, into Target Code. Thus, for example, use of source code generators and preprocessors need not be considered part of the Compilation Process, since the Compilation Process can be understood as starting with the output of the generators or preprocessors.

A Compilation Process is "Eligible" if it is done using GCC, alone or with other GPL-compatible software, or if it is done without using any work based on GCC. For example, using non-GPL-compatible Software to optimize any GCC intermediate representations would not qualify as an Eligible Compilation Process.

1. Grant of Additional Permission.

You have permission to propagate a work of Target Code formed by combining the Runtime Library with Independent Modules, even if such propagation would otherwise violate the terms of GPLv3, provided that all Target Code was generated by Eligible Compilation Processes. You may then convey such a combination under terms of your choice, consistent with the licensing of the Independent Modules.

2. No Weakening of GCC Copyleft.

The availability of this Exception does not imply any general presumption that third-party software is unaffected by the copyleft requirements of the license of GCC.

# Apache License, Version 2.0

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity

exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate

as of the date such litigation is filed.

- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the

appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# BSD 3-clause license

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# BSD 2-clause license

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# The MIT License (MIT)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.