

FreeWare och Open Source**Innehåll**

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1 Vad innebär "GNU General Public License" om man vill använda det i sin produkt?

För att kunna besvara denna fråga till fullo krävs en bakgrund om öppen källkod och förklaring av vissa koncept eftersom det är en djungel av olika begrepp, licenser och förkortningar.

På Open Source Initiatives (OSI) webbsida (<http://www.opensource.org/licenses>) finns en förteckning över de drygt 30 licenser som är godkända av OSI. De fyra första "klassiska" licenserna är GPL, LGPL, BSD license och MIT license. De är de mest använda licenserna före år 1998, därefter har Mozilla Public License (MPL) börjat användas i stor utsträckning. Listan utökas emellertid kontinuerligt och OSI rekommenderar därför nya open source projekt att man helst skall använda en redan godkänd licens som överensstämmer med det egna företagets affärsmodell, om det är möjligt.

Detta dokument beskriver främst licensförhållanden utifrån GNU/Linux, men licensernas regler kan även appliceras på andra operativsystem. Det korrekta namnet på en Linux distribution är GNU/Linux eftersom Linux endast består av operativsystemskärnan och drivrutiner medan GNU-projektet står för alla hjälp- och systemprogram i operativsystemet.

2 Historia

2.1 Open Source Software

Begreppet Open Source Software (OSS) har fått en hel del uppmärksamhet på senare tid. Principiellt är OSS en bland flera modeller för programutveckling, med diverse för- och nackdelar. Anledningen för uppmärksamheten beror till stor del på att Linux har rönt stor framgång och många OSS-anhängare anser att just OSS ligger bakom.

Att dela med sig av källkod är inget nytt begrepp. Linux bygger vidare på tidigare publika projekt, huvudsakligen UNIX och GNU. UNIX utvecklades på Bell Labs, dåvarande AT&T:s forskningslabb. Eftersom AT&T hade diverse juridiska begränsningar kring vad man fick och inte fick göra så kunde man inte kommersiellt exploatera UNIX, och släppte den därför fritt till universitet. Universitet runt om i världen plockade upp UNIX-bollen, eftersom det var det enda avancerade operativsystem där källkod fanns att allmänt tillgå. Därmed var UNIX redan från början en lämplig plattform för Internetforskning, UNIX och Internet utvecklades i samspel från 70-talet och framåt. Eftersom källkoden för UNIX var fritt tillgänglig för forskare, utvecklades och distribuerades det ena UNIX-programmet efter det andra på ett liknande sätt. För att juridiskt hantera detta utvecklades olika standardlicenser, där de mest kända är "BSD"-licensen från Berkley och "GPL" från GNU-projektet, startat av Richard Stallman på MIT.

2.2 GNU/Linux

UNIX blev med tiden kommersialiserad och företag som SUN växte sig stora på den nya marknaden. Tyvärr kom det ingen version för icke-kommersiellt hemmabruk som motsvarade vad universiteten hade tillgång till. Detta ledde till att Linus Thorvalds skrev en egen kärna och fick draghjälp av andra i samma situation. Thorvalds själv visade sig vara duktig på att organisera arbetet. Dessutom var han personligen inte speciellt intresserad av tjäna pengar, det var däremot okej att andra tjänade pengar på hans kod, vilket skulle komma att bli avgörande. Linux kom således att inbegripa Thorvalds ursprungliga kärna, plus alla möjliga publika program, gränssnitt, installationsprogram och så vidare. "Produkten" Linux växte sedan betydligt snabbare än normal accessbandbredd till Internet. Därmed fanns det en kommersiell potential att helt enkelt förpaketera programvara på en CD och sälja till en låg penning. Företag som t.ex. Red Hat har byggt sin verksamhet på just detta. Så fort en intäktström började sippra in till Red Hat med flera, fanns det möjlighet att lägga mer resurser på installationsprogram, drivrutiner och dokumentation, vilket nu börjar ge frukt.

Eftersom UNIX tog det naturliga steget från forskarna till studenterna hade en generation datastuderande fått erfarenhet av UNIX från sin utbildning. När så Internetrevolutionen tog deras arbetsgivare på sängen kunde de använda gamla standardpersondatorer för att installera och köra webbservrar på. Ganska länge var en Linux PC överlägset kostnadseffektiv i denna roll. Samtidigt fortsatte Microsoft sin monopolverksamhet, helt opåverkad av en växande antipati hos både datorproffs, dataföretag och amerikanska staten. Företag som IBM, Compaq, Oracle med flera har haft ett växande behov att finna andra lösningar än att vara beroende av Microsoft, samtidigt som diverse svaga företag som Corel behövt en alternativ plattform för att kunna undvika direkt konkurrens med Microsoft.

Samtliga faktorer ledde till att Linux kunde följa Internetboomen till dagens plats i rampljuset. Men observera att "open source" bara varit en av flera faktorer i Linux framfart. Arbete på universitet och liknande har i princip krävt någon form av publik licens för att kunna samarbeta och detta i sin tur har lett till det tekniska underlag som Linux projektet kan kapitalisera på. Linux har utgått från UNIX. En stor del av koden som ligger på en Linux CD idag är ursprungligen gjord av studenter och forskare på universitet runt om i världen, vars utrustning och löner betalats av universiteten, stipendier, studielån och så vidare. Detta har inte gjorts av hackers på "fritiden". Mycket kvalificerade forskare står för det mesta av det ursprungliga designarbetet.

De stora aktörerna i branschen som t.ex. IBM, Compaq/HP, Intel, Oracle och SGI med flera har de sista åren ökat sitt bidrag mycket med mjukvara, resurser och support. Enligt OSS-modellens licenser kan de behöva dela med sig av sina framsteg till Linux-samfundet om de vill kunna använda förbättringarna i sina egna produkter. Det finns naturligtvis även tusentals mindre företag som har bidragit med lösningar både inom den inbäddade- och desktop/servermarknaden.

3 GNU/Linux, OSS och de olika licenserna

En fråga man ställs inför som utvecklare under GNU/Linux och OSS, är hur man hanterar öppen källkod och licensreglerna eftersom man vill kunna producera egna program med proprietär källkod som har öppen källkod i sig. De flesta tror att man måste släppa sin egenutvecklade källkod fri enligt GPL licensen, vilket inte är riktigt sant. Mellanvara och program som exekverar på GNU/Linux kan vara proprietär, precis som de kan vara det på andra operativsystem. Detsamma gäller även andra komponenter som t.ex. drivrutiner om man följer de uppsatta reglerna för respektive licensform.

3.1 GNU General Public License (GPL)

GNU General Public License är en "copyleft", fri mjukvarulicens. Den refereras också till som "GNU GPL" eller helt enkelt "GPL".

GPL skrevs av Richard Stallman 1989 för att distribuera program släppta som delar av GNU-projektet. Den var baserad på liknande licenser använda för tidiga versioner av Stallmans GNU Emacs. GPL har sen dess introduktion blivit den mest använda av licenserna för fri mjukvara.

Vad är då GPL? Villkoren i GPL gäller alla som får en kopia av det GPL:ade arbetet. Man har rätt att modifiera, kopiera och återdistribuera arbetet eller härledda versioner, antingen utan kostnad eller för en summa pengar. Det senare, att man är tillåten att sälja mjukvaran, skiljer GPL från andra mjukvarulicenser som förbjuder kommersiell återdistribuering. Stallman menar att fri mjukvara inte ska sätta restriktioner på kommersiell användning, och GPL uttrycker klart och tydligt att GPL:ade arbeten får (åter)säljas.

Om man distribuerar kopior av arbetet är man tvungen att erbjuda källkoden till varje mottagare, inklusive de modifieringar man gjort. Detta krav kallas "copyleft". I praktiken kommer GPL:ade program ofta tillsammans med källkoden men ofta är enbart källkoden distribuerad, och mottagarna förväntas kompilera det själva.

Man är bara tvungen att tillhandahålla källkoden till de som fått en kopia av programmet. Om man t.ex. gör privata modifieringar av arbetet men inte distribuerar det behöver man inte ge modifieringarna till någon.

Eftersom arbetet är upphovsrättsskyddat har licenstagaren (vem som helst som får en kopia av programmet) inga rättigheter till att modifiera eller återdistribuera, förutom under villkoren ställda i GPL. Om en person distribuerar kopior av arbetet (i synnerhet modifierade versioner) men håller källkoden hemlig kan personen stämmas av den ursprungliga upphovsmakaren under upphovsrättslagen. Detta är en knepig rättslig tvist och anledningen till att GPL har beskrivits som ett "copyright hack". Det försäkras också att obegränsade återdistribueringsrättigheter inte är beviljade, om något rättsligt fel skulle hittas i GPL.

GPL licensen kräver alltså att: Om man använder sig av GPL licenserad källkod eller modifierar och återdistribuerar program med dessa förändringar så måste man släppa källkoden fri. Dessutom måste andra utvecklare få GPL rättigheter av

dig för att i sin tur kunna modifiera, bygga om och återdistribuera källkoden utan några krav på att betala royalty etc.

Det är FSF (Free Software Foundation) som publicerar och har copyright på GPL-licensen; till skillnad från arbeten släppta under GPL är det för själva GPL inte tillåtet att fritt modifiera texten. Kopiering och distribuering är tillåten, men inte modifiering.

Mjukvara som använder sig av GPL inkluderar Linuxkärnan, Perl, Samba, KDE, GNU-programmen och mycket, mycket mer.

3.2 GNU Lesser General Public License (LGPL)

Eftersom GPL licensen är väldigt stark och gör alla arbeten som baseras på eller kommer i kontakt med GPL i någon form att själv lyda under GPL licensen har FSF också tagit fram Lesser GPL (LGPL), tidigare kallat Library GPL.

GNU LGPL är en licens utformad som en kompromiss mellan GNU GPL och de enklare licenserna som t.ex. BSD. Det placerar en copyleft-restriktion på individuella källkodsfiler men copyleft:ar inte programmet i sin helhet. Licensen nyttjas ofta utav mjukvarubibliotek (libraries); LGPL tillåter att biblioteket används i proprietära program, medan GPL endast skulle tillåta det att används i fria program.

Ett LGPL exempel är GNU C biblioteket (glibc) som är standardbiblioteket för GNUs C-kompilator gcc, d.v.s. i stort sett alla kompillerade program i systemet använder sig av detta bibliotek.

Under LGPL kan källkod som länkas mot ett LGPL licenserat bibliotek alltså licenseras som proprietär källkod. T.ex. kan en kommersiell applikation fritt använda headerfiler och kod från ett LGPL bibliotek så länge headerfilen lyder under de licensregler som är beskrivna i LGPL licensen. Att däremot länka källkoden mot GPL licenserad mjukvara slutar alltid med att mjukvaran helt måste licenseras enligt GPL.

De flesta (för att inte säga alla) LGPL bibliotek är dynamiska av den anledningen att om man skulle länka in biblioteket statiskt i sin applikation och distribuera sitt program så skulle man olagligt distribuera biblioteket och därmed förverka sin LGPL licens.

I klartext betyder det att om man länkar sina program dynamiskt mot LGPL licenserade bibliotek och inte använder sig av GPL kod så kan man tillverka egna proprietära program. Länkar man däremot mot GPL bibliotek eller kopierar kod från GPL program och återanvänder den så måste man distribuera programvaran som GPL. Det är dock tillåtet att studera källkod från GPL program och använda idéer från dessa program till sitt eget program så länge det anses vara tillräckligt olikt det ursprungliga GPL programmet.

Man kan modifiera och distribuera ett LGPL bibliotek under förutsättning att det modifierade arbetet är ett programbibliotek, förändringarna är dokumenterade och att källkoden görs tillgänglig för mottagarna av biblioteket.

Är GPL och LGPL samma sak som öppen källkod? (L)GPL och open source diskuteras ofta tillsammans, men det är två olika koncept. Open source är en filosofi och några regler. (L)GPL är ett exempel på en open source licens av flera som finns på marknaden. Andra open source licenser kan ha annorlunda licensregler jämfört med (L)GPL. Se OSI:s webbsida för exakt information.

3.3 Olika exempel och regler

3.3.1 Jag har skrivit ett slutet program, måste jag distribuera källkoden fritt?

Om ditt program endast innehåller din egen kod och ej använder sig av någon GPL-programvara så kan utvecklaren själv välja licensform. Om man däremot kopierat eller återanvänt källkod från en GPL licenserad applikation måste man distribuera sitt program under GPL, eftersom GPL är en distributionslicens och inte en intellektuell ägandelicens.

Applikationer som använder sig av statiska eller dynamiska LGPL licensierade bibliotek behöver inte licensieras under GPL, dessa kan licensieras som utvecklaren själv vill. Det grundläggande biblioteket för C-program är som tidigare sagts GNU C-biblioteket glibc. Detta bibliotek är LGPL licensierat och kan således användas till applikationer med proprietär källkod.

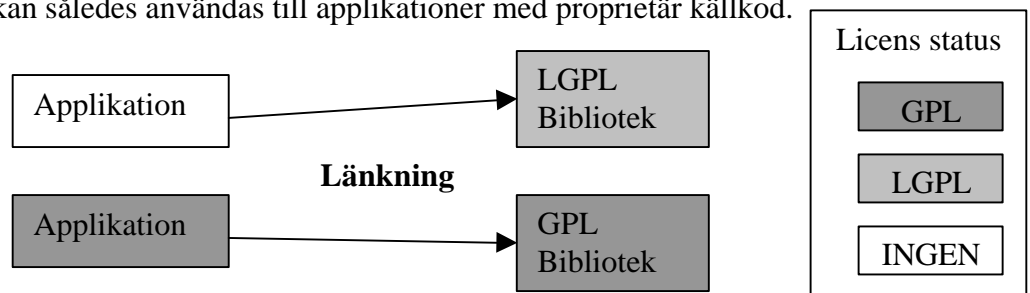


Fig.1 Diagram som åskådliggör resultatet för applikationen vid olika länkningsfall.

3.3.2 Kan man distribuera GPL licenserade program med sitt eget proprietära program?

Det är högst troligt att ett egenutvecklat program i någon mån använder sig av ett GPL program annars skulle man inte kunna köra det i någon Linuxdistribution alls eftersom de flesta program i systemet är GPL program.

Reglerna säger här, att så länge det egenutvecklade programmet inte är beroende av ett speciellt program för att fungera och kommunicerar via formella mekanismer (Linux IPCer som fil I/O, pipes, sockets, köer etc.) så kan man behandla dem som två olika program. Skulle programmen däremot tillsammans uppträda som två delar av ett programs funktionalitet så måste båda programmen vara släppta under GPL licensen. Undantag görs dock för program som är väl separerade som t.ex. en editor och kommandoskalet.

3.3.3 GPL är en distributionslicens

GPL tvingar dig inte att distribuera något modifierat program. GPL reglerna träder endast i kraft när man distribuerar modifierade program. Praxis är att allt man gör "in house" för utvecklingssyfte är totalt skyddat. Men om man senare vill sälja (distribuera) programvaran gäller GPL.

3.3.4 Kan man sälja ett GPL program?

Ja enligt licensen är det tillåtet men om man distribuerar kopior av arbetet är man tvungen att erbjuda källkoden till varje mottagare, inklusive de modifikationer man gjort.

3.3.5 Hur vet man om sin applikation är "deriverad" ifrån en GPL licensierad applikation?

GPL definierar inte själv "deriverad". GPL refererar specifikt till: (1) modifieringar som är arbete baserat på GPL licensierad kod, och (2) identifierbara sektioner i modifieringen inte är baserat på GPL licensierad kod och därmed kan antas vara ett oberoende separat arbete i sig själv.

Det är inte alltid lätt att särskilja vad detta, men GPL licensen uttrycker specifikt att "syftet inte är att göra anspråk på rättigheter till kod skriven enbart av dig" utan att "utöva rättigheten till att kontrollera distributionen av deriverade eller kollektiva arbeten".

Ett "deriverat arbete" anses vara ett arbete som baseras på ett eller flera tidigare arbeten som t.ex. en översättning, sammanfattning, omformat arbete etc. Allt arbete som i stort sett representerar originalarbetet i någon form anses vara "deriverat arbete".

3.3.6 Modul och drivrutinsexempel

När det gäller programmoduler och drivrutiner som infogas i Linuxkärnan är reglerna lite annorlunda eftersom kärnan är GPL:ad. Generellt sett beror det på hur man länkat drivrutinen eller programmodulen mot Linuxkärnan. D.v.s. om modulen statiskt ingår i den monolitiska kärnan eller modulen dynamiskt kan infogas eller tas bort ur kärnan.

Har man länkat sin drivrutin eller programmodul statiskt till Linuxkärnan måste man släppa den under GPL. Ser man till att den laddbara drivrutinen eller programmodulen är dynamiskt länkad mot Linuxkärnans standardexporterade symboler så kan den distribueras som proprietär källkod, förutsatt att källkoden inte länkas mot något GPL bibliotek enligt diskussionen ovan.

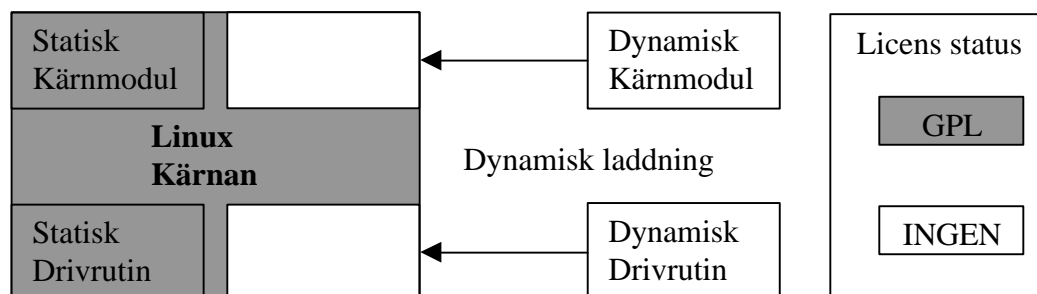


Fig.2 Den monolitiska Linuxkärnan och resultatet för moduler och drivrutiner vid olika länkningar.

3.3.7 Korta frågor och svar om GPL och LGPL

F1: En utvecklare vill skapa en applikation med proprietär källkod.

S1: Applikationen kan vara proprietär så länge den är länkad mot LGPL bibliotek och ej innehåller någon källkod från GPL eller LGPL licenserade källor.

F2: En utvecklare vill skapa en drivrutin med proprietär källkod.

S2: Drivrutinen kan vara proprietär så länge den är implementerad som en dynamiskt laddbar kärnmodul och använder de standardexporterade kärnsymbolerna

F3: En utvecklare vill modifiera kärnan, ett GPL/LGPL bibliotek eller GPL källkod.

S3: För var och ett av dessa fall måste utvecklaren göra källkoden tillgänglig för kunder som GPL licensierad mjukvara om han distribuerar programmet.

F4: Gör det någon skillnad hur man fysiskt distribuerar källkod?

S4: Nej, det som betyder nåt är hur källkoden är relaterad till GPL licensierad kod.

F5: Hur stor är sannolikheten att råka ut för trubbel rörande dessa licenser?

S5: Linus Torvalds och FSF har båda gett sina tolkningar av GPL licensen och ännu har GPL inte prövats i någon domstol. För tillfället är nog inte skadan för företagen den olagliga skadan vid licensbrott utan det dåliga ryktet en överträdelse ger företaget.

F6: Kan man ta betalt för ett program som innehåller fri programvara?

S6: Ja det kan man. Med fri i detta avseende menas att man fritt kan modifiera och distribuera mjukvaran. Det har inget att göra med vad programvaran kostar eller skall kosta.

F7: Varför kan man behöva betala för en produkt som fri?

S7: Man kan enkelt få tag på källkod under GPL som är fri. Men det finns inget som garanterar att den går att kompilera, täcker de behov man har eller fungerar som den skall i den miljö man tänkt använda den i. För omfattande och komplex kod kan det löna sig att låta en leverantör leverera, kontinuerligt uppdatera och stödja produkten.

3.3.8 Rekommendationer för att tillverka en proprietär applikation

1. Förstå licenskraven från all kod du väljer att inkludera.
2. Använda sig av de standardexporterade kärnsymboler som finns definierade i /proc/ksyms.
3. Vara försiktig i användandet av bibliotek, GPL licensierade bibliotek skall undvikas.
4. Om man utför modifieringar på Linuxkärnan eller GPL licensierade applikationer och LGPL bibliotek måste man vara beredd på att distribuera sina modifieringar fritt enligt GPL.

3.4 Slutsats

Slutsatsen är att om man planerar sitt programmeringsprojekt, så kan man dra stor nytta av fria programvaror och släppa en proprietär programvara som man

- "2" MPL 1.1 kan specifikt rättas till för att tillåta kombinerad med GPL i enlighet med FSF:s licens lista (<http://www.fsf.org/licenses/license-list.html>).

Förklaring av kolumner:

- "hackers brukar föredra kod under denna licensform " – Med detta menas om medlemmar i samfundet föredrar att **använda** källkod under licensen i jämförelse mot om medlemmarna föredrar att **skapa** ny källkod under licensen.
- "kombinera med proprietär källkod och återdistribuera" – Det är tillåtet att använda källkod från upphovsmannen enligt licensen, kombinera med egen proprietär källkod och distribuera resultatet till tredje person utan att ge dem en fri öppen licens på den proprietära källkoden.
- "kombinera med GPL:ad kod och återdistribuera" – Det är tillåtet att använda källkod från upphovsmannen enligt licensen, kombinera med GPL:ad kod, och distribuera resultatet till tredje person.
- "återdistribuerad version måste vara öppen källkod" – Det är ej tillåtet modifiera källkoden och vidare distribuera den i proprietär form, källkoden måste ingå.
- "måste inkludera patentlicens med tillägget" – Licensen kräver att personen som modifierar och kombinerar erhållen källkod med egen kod och sedan vidare distribuerar en kombinerad applikation måste erlagga en licens för varje ingående patent som kan begränsa användningen av den resulterande applikationen.

Förklaring av rader:

- "BSD, et al." refererar till flera olika licenser som alla är varianter av en enkel tolerant licens. De inkluderar: Den modifierade BSD licensen, X11 licensen, MIT licensen (vilken FSF föredrar att kalla "Expat license" eftersom det finns flera licenser under MIT).
- "GNU LGPL" är listad på FSF's webbsida som "The GNU Lesser General Public License (eller GNU LGPL)". Den är listad på opensource.org som "The GNU Library eller 'Lesser' Public License (LGPL)".
- "GNU GPL" är listad på FSF's webbsida som "The GNU General Public License (eller GNU GPL)". Den är listad på opensource.org som "The GNU General Public License (GPL)".
- "Mozilla PL 1.1" är listad på FSF's webbsida som "The Mozilla Public License (MPL)". Den är listad på opensource.org som "The Mozilla Public License 1.1 (MPL 1.1)".

6 Definitioner och ordlista

Copyleft – Om man distribuerar kopior av verket är man tvungen att erbjuda källkoden till varje mottagare, inklusive de modifieringar man gjort. Detta krav kallas "copyleft".

FSF - Free Software Foundation, <http://www.gnu.org/fsf/fsf.html>

GNU - Betyder GNU is Not UNIX! Den fria programvaran i en Linuxdistribution, <http://www.gnu.org/gnu/linux-and-gnu.html>

GNU/Linux - GNU programmen och Linux ger tillsammans en fri UNIX.

GPL – GNU General Public License, <http://www.gnu.org/copyleft/gpl.html>

IPC – Inter-Process Communication, kommunikation emellan processer

Linux – Operativsystemets kärna och drivrutiner i en Linuxdistribution.

LGPL – Lesser General Public License, <http://www.gnu.org/copyleft/lesser.html>

Modul – Ett program som oftast är en drivrutin av något slag, viket kan infogas i kärnan för att utöka dess funktion.

Monolitisk – Kärnan i Linux kan vara byggd i ett stycke, motsatsen till mikrokernel.

Proprietär - Något som är proprietärt är något som har en ägare, t.ex. sluten källkod.

OSI - Open Source Initiative, <http://www.opensource.org>

OSS - Open Source Software, <http://www.opensource.org>

6.1 Resurser på Internet

Free Software Foundation - <http://www.fsf.org>

LinuxDevices.com - <http://linuxdevices.com>

Open Source Initiative - <http://www.opensource.org>

Unix.se - <http://www.unix.se>

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6.2 Övriga resurser

Open Source, The GPL and You - White paper från MontaVista Software.

7 Bilagor

7.1 The GNU General Public License (GPL)

7.1.1 Version 2, June 1991

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