Risc-v 开发

Risc-v 基础知识

北京飞利信科技股份有限公司

2018 年 5 月

RISC-V 知识产权使用说明

BSD licenses

BSD licenses are a family of permissive free software licenses, imposing minimal restrictions on the use and redistribution of covered software. This is in contrast to copyleft licenses, which have reciprocity share-alike requirements. The original BSD license was used for its namesake, the Berkeley Software Distribution (BSD), a Unix-like operating system. The original version has since been revised and its descendants are more properly termed modified BSD licenses. BSD is both a license and a class of license (generally referred to as BSD-like). The modified BSD license (in wide use today) is very similar to the license originally used for the BSD version of Unix. The BSD license is a simple license that merely requires that all code be licensed under the BSD license if redistributed in source code format. BSD (unlike some other licenses) does not require that source code be distributed at all.

Contents

1 Terms

In addition to the original (4-clause) license used for BSD, several derivative licenses have emerged that are also commonly referred to as a "BSD license". Today,

the typical BSD license is the 3-clause version, which is revised from the original 4-clause version.   In all BSD licenses as following, <organization> is the organization of the <copyright holder> or just the <copyright holder>, and <year> is the year of the copyright. As published in BSD, <copyright holder> is "Regents of the University of California", and <organization> is "University of California, Berkeley".

1.1 Previous license

Some releases of BSD prior to the adoption of the 4-clause BSD license used a license that is clearly ancestral to the 4-clause BSD license. These releases include 4.3BSD-Tahoe (1988) and Net/1 (1989). Though largely replaced by the 4-clause license, this license can be found in 4.3BSD-Reno, Net/2, and 4.4BSD-Alpha.

Copyright (c) <year> <copyright holder>. All rights reserved.

Redistribution and use in source and binary forms are permitted provided that the above copyright notice and this paragraph are duplicated in all such forms and that any documentation, advertising materials, and other materials related to such distribution and use acknowledge that the software was developed by the <organization>. The name of the <organization> may not be used to endorse or promote products derived from this software without specific prior written permission. THIS SOFTWARE IS PROVIDED ``AS IS'' AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

1.2 4-clause license (original "BSD License")

The original BSD license contained a clause not found in later licenses, known as the "advertising clause". This clause eventually became controversial, as it required authors of all works deriving from a BSD-licensed work to include an acknowledgment of the original source in all advertising material. This was clause number 3 in the original license text:

Copyright (c) <year> <copyright holder>. 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 acknowledgement:

This product includes software developed by the <organization>.

4. Neither the name of the <organization> 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 <COPYRIGHT HOLDER> "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 <COPYRIGHT HOLDER> 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 clause was objected to on the grounds that as people changed the license to reflect their name or organization it led to escalating advertising requirements when programs were combined together in a software distribution: every occurrence of the license with a different name required a separate acknowledgment. In arguing against it, Richard Stallman has stated that he counted 75 such acknowledgments in a 1997 version of NetBSD.

In addition, the clause presented a legal problem for those wishing to publish BSD-licensed software which relies upon separate programs using the GNU GPL: the

advertising clause is incompatible with the GPL, which does not allow the addition of restrictions beyond those it already imposes; because of this, the GPL's publisher, the Free Software Foundation, recommends developers not use the license, though it states there is no reason not to use software already using it.

Today, this original license is now sometimes called "BSD-old" or "4-clause BSD".

1.3 3-clause license ("BSD License 2.0", "Revised BSD License", "New BSD License", or "Modified BSD License")

The advertising clause was removed from the license text in the official BSD on 22 July 1999 by William Hoskins, Director of the Office of Technology Licensing for UC Berkeley. Other BSD distributions removed the clause, but many similar clauses remain in BSD-derived code from other sources, and unrelated code using a derived license.

While the original license is sometimes referred to as the "BSD-old", the resulting 3-clause version is sometimes referred to by "BSD-new." Other names include "New BSD", "revised BSD", "BSD-3", or "3-clause BSD". This version has been vetted as an Open source license by the OSI as "The BSD License".The Free Software Foundation, which refers to the license as the "Modified BSD License", states that it is compatible with the GNU GPL. The FSF encourages users to be specific when referring to the license by name (i.e. not simply referring to it as "a BSD license" or "BSD-style") to avoid confusion with the original BSD license.

This version allows unlimited redistribution for any purpose as long as its copyright notices and the license's disclaimers of warranty are maintained. The license also contains a clause restricting use of the names of contributors for endorsement of a derived work without specific permission.

Copyright (c) <year>, <copyright holder> 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 <organization> 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 <COPYRIGHT HOLDER> 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.

1.4 2-clause license ("Simplified BSD License" or "FreeBSD License")

An even more simplified version has come into use, primarily known for its usage in FreeBSD. It was in use there as early as April 29, 1999 and likely well before. The primary difference between it and the New BSD (3-clause) License is that it omits the non-endorsement clause. It also adds a further disclaimer about views and opinions expressed in the software. The Free Software Foundation, which refers to the license as the FreeBSD License, states that it is compatible with the GNU GPL. In addition, the FSF encourages users to be specific when referring to the license by name (i.e. not simply referring to it as "a BSD license" or "BSD-style"), as it does with the modified/new BSD license, to avoid confusion with the original BSD license.

Copyright (c) <year>, <copyright holder> 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.

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.

The views and conclusions contained in the software and documentation are those of the authors and should not be interpreted as representing official policies, either expressed or implied, of the <project name> project. Other projects, such as NetBSD, use a similar 2-clause license, but without the additional disclaimer. This version has been vetted as an Open source license by the OSI as the "Simplified BSD License." The ISC license is functionally equivalent, and endorsed by the OpenBSD project as a license template for new contributions.

2 License compatibility

2.1 Commercial license compatibility

The FreeBSD project argues on the advantages of BSD-style licenses for companies and commercial use-cases due to their license compatibility with proprietary licenses and general flexibility, stating that the BSD-style licenses place

only "minimal restrictions on future behavior" and aren't "legal time-bombs", unlike copyleft licenses. The BSD License allows proprietary use and allows the software released under the license to be incorporated into proprietary products. Works based on the material may be released under a proprietary license as closed source software, allowing usual commercial usages under them.

2.2 FOSS compatibility

The 3-clause BSD license, like most permissive licenses, is compatible with almost all FOSS licenses (and as well proprietary licenses).

Two variants of the license, the New BSD License/Modified BSD License (3-clause), and the Simplified BSD License/FreeBSD License (2-clause) have been verified as GPL-compatible free software licenses by the Free Software Foundation, and have been vetted as open source licenses by the Open Source Initiative. The original, 4-clause BSD license has not been accepted as an open source license and, although the original is considered to be a free software license by the FSF, the FSF does not consider it to be compatible with the GPL due to the advertising clause.

3 Reception and usage

The BSD license family is one of the oldest and broadly used license family in the FOSS ecosystem. Also, many new licenses were derived or inspired by the BSD licenses. Many FOSS software projects use a BSD license, for instance the BSD OS family (FreeBSD etc.), Google's Bionic or Toybox. As of 2015 the BSD 3-clause license ranked in popularity number five according to Black Duck Software and sixth according to GitHub data.

原文详见 https://en.wikipedia.org/wiki/BSD_licenses

对应翻译概要：

BSD 许可证是一个自由软件许可协议，对使用和重新分发软件施加最小的限制。这和版权许可证形成鲜明对比，达到互惠互利共享的要求。最初的 BSD 许可协议是用于其同名 Berkeley Software Distribution(BSD)类 unix 操作系统。最初的版本已经修改，修改后的 BSD 许可证在今天广泛使用，类似于最初 BSD 许可证版本。BSD 许可证是一个简单的许可，只需要在 BSD 许可下以源代码格式重新分发所有代码。

内容

1 条款

1 条款

除了原始(4-clause)用于 BSD 许可证,现在已经出现了几种导数许可证,也通常被称为"BSD 许可"。目前,典型的 BSD 许可协议是原始 4-clause 修订版本、3 条款版本。

1.1 以前的许可证

一些之前版本的 BSD 的包括 4.3 bsd-tahoe(1988)和 Net/1(1989),目前大部分被 4-clause 许可证取代。

在上述版权声明和本条款免责声明的前提下,允许以源代码和二进制形式重新分发和使用。

1.2 4-clause 许可证(原"BSD 许可协议")

最初的 BSD 许可协议中没有包含所谓的"广告条款",这一条款是有争议的。以下是原始许可证文本中的第 3 条:只要满足以下条件,就允许在修改或不修改的情况下以源代码和二进制形式重新分发和使用:

(1)如果再发布的产品中包含源代码,则在源代码中必须带有原来代码中的 BSD 协议。

(2)如果重新发布二进制类库/软件,则需要在类库/软件的文档和版权声明中包含原来代码中的 BSD 协议。

(3)所有提及此软件功能或使用的广告材料必须显示以下声明:本产品包含由<组织>开发的软件。

（4）未经事先书面许可，不可以用开源代码的作者/机构名字和原来产品的名字做市场推广。

1.3 3 条款许可协议（"2.0 BSD 许可"、"修订 BSD 许可"，"新 BSD 许可协议"，或"修改 BSD 许可协议"）

原证被称为"BSD-old"，3 条款版本被"BSD-new。"其他名称包括"新 BSD"、"修订 BSD"、"BSD-3"或"3 条款 BSD"。这个版本已经审查作为一个开放源码许可的 OSI"BSD 许可证"。只要其版权声明和许可的免责声明被维护，本版本允许无限的重新分配。许可证还包含一项条款，在没有特定的许可下，限制使用贡献者的名字及其衍生作品。

如果符合以下条件，则允许在源代码和二进制形式中进行重新分配和使用，只要符合以下条件：

（1）如果再发布的产品中包含源代码，则在源代码中必须带有原来代码中的 BSD 协议。

（2）如果重新发布二进制类库/软件，则需要在类库/软件的文档和版权声明中包含原来代码中的 BSD 协议。

（3）未经事先书面许可，不可以用开源代码的作者/机构名字和原来产品的名字做市场推广。

1.4 2-clause 许可证（"简化 BSD 许可"或"FreeBSD 许可证"）

更简化的版本已经投入使用，被称为 FreeBSD。它和 BSD 许可证(3 条款)的主要区别是省略了非担保的条款，还添加了一个进一步声明软件来表达观点和意见。自由软件基金会声明 FreeBSD 许可执照与 GNU GPL 兼容。此外，FSF 鼓励用户在按名称引用许可证时更加具体，不要混淆新版 BSD 协议与那些可以免费获得的公共域服务或者产品，那些虽然也是可以免费地使用于任何目的，但是它们是没有所有者的。

只要满足以下条件，就允许在修改或不修改的情况下以源代码和二进制形式重新分发和使用：

（1）源代码的再发布必须遵守上述版权通知、本条件列表以及以下免责声明。

（2）以二进制形式再发布软件时必须复制上述版权通知、本条件列表以及文档下文中的免责声明和/或发布代码时提供的其他信息。

本软件为版权所有人和贡献者"按现状"为根据提供，不提供任何明确或暗

示的保证，包括但不限于本软件针对特定用途的可售性及适用性的暗示保证。在任何情况下，版权所有人或其贡献者均不对因使用本软件而以任何方式产生的任何直接、间接、偶然、特殊、典型或因此而生的损失（包括但不限于采购替换产品或服务；使用价值、数据或利润的损失；或业务中断）而根据任何责任理论，包括合同、严格责任或侵权行为（包括疏忽或其他）承担任何责任，即使在已经提醒可能发生此类损失的情况下。

2 许可证兼容性

2.1 商业许可证兼容性

FreeBSD 认为 bsd 许可证适用于公司和商业用的优势在于许可证与专有许可证兼容并具有灵活性，并声明 BSD 式许可证只对"未来行为做出最小限制"不像版权许可证。BSD 许可证允许专有使用，并允许将根据许可证发布的软件合并到专有产品中。 基于该材料的工作可能会作为封闭源代码软件在专有许可下发布，且允许常用商业用途。

2.2 自由/开源软件的兼容性

与多数许可一样，3 条款 BSD 许可协议与几乎所有的 FOSS 许可兼容。新 BSD 许可协议和简化的 BSD 许可已经通过 GPL 兼容的免费软件许可证，并被开放源代码计划视为开源许可证。

3 接收和使用

BSD 许可证系列是自由/开源软件生态系统中最古老和广泛使用的许可证系列之一。同时,许多新的许可证都是由 BSD 许可证衍生或启发的。许多自由/开源软件项目使用 BSD 许可证,例如 BSD 操作系统系列(FreeBSD 等),谷歌的仿生或宠物网页。根据 GitHub 数据，截至 2015 年，BSD 3 条款许可证的排名在受欢迎程度排名第五。

4 补充

BSD 开源协议是一个给于使用者很大自由的协议。可以自由的使用，修改源代码，也可以将修改后的代码作为开源或者专有软件再发布。当你发布使用了 BSD 协议的代码，或则以 BSD 协议代码为基础做二次开发自己的产品时，需要满足三个条件：

（1）如果再发布的产品中包含源代码，则在源代码中必须带有原来代码中的 BSD 协议。

（2）如果再发布的只是二进制类库/软件，则需要在类库/软件的文档和版权

声明中包含原来代码中的 BSD 协议。

（3）不可以用开源代码的作者/机构名字和原来产品的名字做市场推广。

BSD 代码鼓励代码共享，但需要尊重代码作者的著作权。BSD 由于允许使用者修改和重新发布代码，也允许使用或在 BSD 代码上开发商业软件发布和销售，因此是对商业集成很友好的协议。而很多的公司企业在选用开源产品的时候都首选 BSD 协议，因为可以完全控制这些第三方的代码，在必要的时候可以修改或者二次开发。