**OPEN SOURCE SOFTWARE NOTICE**

The open source software notice for the open source software used in this openEuler distribution (“openEuler distribution”) is provided in this document. The open source software licenses are granted by the respective right holders. With regard to the respective open source software contained in the openEuler distribution, the applicable open source software license will prevail all other license agreement, including but not limited to the openEuler Software License, in case of any conflicts.

**Warranty Disclaimer**

**THE OPEN SOURCE SOFTWARE IN THIS OPENEULER DISTRIBUTION IS PROVIDED ON AN "AS IS" BASIS, WITHOUT ANY WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.  
See the applicable licenses for more details.**

**Copyright Notice and License Texts**

Software: bcc 0.29.1

**Copyright notice:**

Copyright (c) 2016 Allan McAleavy.  
Copyright (C) 1994-2012 Lua.org, PUC-Rio. All rights reserved.  
Copyright (C) 2008-2009, Thomas Gleixner <tglx@linutronix.de>  
Copyright (C) 2020 Facebook, Inc.  
Copyright 2016 Netflix, Inc.  
Copyright (c) 2020 Wenbo Zhang include <vmlinux.h>  
Copyright (C) 1991, 1999 Free Software Foundation, Inc.  
Copyright (c) 2018 Facebook ! \file  
Copyright (c) 2016-present, Facebook, Inc.  
Copyright (c) 2020 Facebook ifndef PIDITERH define PIDITERH  
Copyright (C) year name of author  
Copyright (c) 20212022 Hengqi Chen  
Copyright (c) 20212022 Hengqi Chen ifndef SIGSNOOPH define SIGSNOOPH  
Copyright (c) 2018 Netronome Systems, Inc.  
Copyright (c) 2022 Francis Laniel <flaniel@linux.microsoft.com>  
Copyright (C) 2019 Isovalent, Inc.  
Copyright 2016 GitHub, Inc.  
Copyright (c) 2012 Two Blue Cubes Ltd. All rights reserved.  
Copyright (c) 2018 Politecnico di Torino  
Copyright (c) 2016 Jan Ruth  
Copyright (c) 2020-present Facebook.  
Copyright (C) 2017 Nicira, Inc.  
Copyright (c) 2021 Wenbo Zhang  
Copyright (C) 2020 Tejun Heo <tj@kernel.org>  
Copyright (C) 2022 Rong Tao  
Copyright (C) 2008-2011, Red Hat, Inc., Peter Zijlstra  
Copyright (c) 2019 Facebook  
Copyright (c) 20212022 Hengqi Chen ifndef MDFLUSHH define MDFLUSHH  
Copyright (c) PLUMgrid, Inc.  
Copyright 2017 Facebook, Inc Licensed under the Apache License, Version 2.0 (the License)  
Copyright 2018 Red Hat, Inc.  
Copyright (c) 2015 Jiri Pirko <jiri@resi.us>  
Copyright 2020 Kinvolk GmbH  
Copyright (c) 2021 Yaqi Chen  
Copyright (c) Catalysts GmbH Licensed under the Apache License, Version 2.0 (the License)  
Copyright (c) 2016 Allan McAleavy Licensed under the Apache License, Version 2.0 (the License)  
Copyright (c) 2016 GitHub, Inc.  
Copyright 2018 Facebook, Inc Licensed under the Apache License, Version 2.0 (the License)  
Copyright 2019 Facebook, Inc Licensed under the Apache License, Version 2.0 (the License)  
Copyright (c) 2021 Facebook  
Copyright 2017 Rodrigo Manyari Licensed under the Apache License, Version 2.0 (the License)  
Copyright (C) 2016 Sasha Goldshtein.  
Copyright (c) 2022 Nicolas Sterchele  
Copyright (c) 2016 Catalysts GmbH  
Copyright (c) 2022 Hengqi Chen  
Copyright (c) 2016 Jan Ruth Licensed under the Apache License, Version 2.0 (the License)  
Copyright 2015 PLUMgrid  
Copyright (c) 2021 Facebook ifndef SKELINTERNALH define SKELINTERNALH  
Copyright (c) 2022, Kuifeng Lee All rights reserved.  
Copyright (c) 2020 Anton Protopopov ifndef SYSCOUNTH define SYSCOUNTH  
Copyright (C) 2011, Chris Foster [chris42f (at) gmail (d0t) com]  
Copyright (c) 2016 PLUMgrid Licensed under the Apache License, Version 2.0 (the License)  
Copyright(c) 2018 Intel Corporation.  
Copyright 2016 GitHub, Inc  
Copyright (c) 2020 Facebook, Inc.  
Copyright (c) 2008 Eli Friedman  
Copyright (c) 2018 Clevernet, Inc.  
Copyright 2017, Sasha Goldshtein Licensed under the Apache License, Version 2.0 (the License)  
Copyright (c) 2019 Facebook, Inc.  
Copyright (c) 2022 Krisztian Fekete include <vmlinux.h>  
Copyright (c) 2018 Google, Inc.  
Copyright (c) 2022 Rocky Xing.  
Copyright (c) 2021 Hengqi Chen  
Copyright (c) 2003-2013 Thomas Graf <tgraf@suug.ch>  
Copyright (c) 2021 Google LLC.  
Copyright 2019 Instana, Inc.  
Copyright (c) 2019 Netronome Systems, Inc.  
Copyright (C) 2018 Netronome Systems, Inc.  
Copyright (c) 2017 VMware, Inc.  
Copyright 2018 Netflix, Inc.  
Copyright (c) 2021 Hengqi Chen 30-May-2021 Hengqi Chen Created this.  
Copyright (c) Suchakra Sharma <suchakrapani.sharma@polymtl.ca>  
Copyright 2017 Facebook, Inc.  
Copyright (c) 2022 Hengqi Chen ifndef TCPLIFEH define TCPLIFEH  
Copyright (c) 2021 ByteDance Inc. All rights reserved.  
Copyright Iowa State University 2009-2010.  
Copyright (c) Ping Gan.  
Copyright (c) Jinshan Xiong Licensed under the Apache License, Version 2.0 (the License)  
Copyright (c) 2021 Facebook include <stdio.h>  
Copyright (c) 2018, Google, Inc.  
Copyright (c) 2016 Facebook  
Copyright (C) 2017-2018 Netronome Systems, Inc.  
Copyright (c) 2020 Anton Protopopov ifndef VFSSTATH define VFSSTATH  
Copyright (c) 2022 Chen Tao ifndef JAVAGCH define JAVAGCH  
Copyright 2022 Sony Group Corporation  
Copyright 2017, Sasha Goldshtein Licensed under the Apache License, Version 2.0  
Copyright (c) 2018 Facebook ifndef UAPILINUXBTFH define UAPILINUXBTFH  
Copyright (c) 2020 Wenbo Zhang  
Copyright (c) 2020 Anton Protopopov ifndef MAPSBPFH define MAPSBPFH  
Copyright 2016 Cloudflare, Inc.  
Copyright (c) 2015 Brendan Gregg.  
Copyright (c) GitHub, Inc.  
Copyright 2021, Athira Rajeev, IBM Corp.  
Copyright (c) 2020 Facebook include <vmlinux.h>  
Copyright (c) 2019 Kinvolk GmbH  
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.  
Copyright (c) 2022 Nicolas Sterchele include vmlinux.h  
Copyright (c) 2021 Wenbo Zhang include <vmlinux.h>  
Copyright (c) 2020 Politecnico di Torino  
Copyright (c) 2021 Facebook ifndef BPFGENINTERNALH define BPFGENINTERNALH  
Copyright (C) 2020 Facebook include <errno.h>  
Copyright 2013 Daniel Borkmann <daniel@iogearbox.net>  
Copyright (c) 2021 Rong Tao.  
Copyright (c) 2019 Facebook include <vmlinux.h>  
Copyright (C) 2011 - 2012 Andrzej Krzemienski.  
Copyright (c) 2019 Wenbo Zhang Licensed under the Apache License, Version 2.0 (the License)  
Copyright 2017, Sasha Goldshtein.  
Copyright 2017 Sasha Goldshtein  
Copyright 2019 Clevernet  
Copyright (c) 2011-2014 PLUMgrid, http://plumgrid.com  
Copyright (c) 2022 Meta Platforms, Inc. and affiliates.  
Copyright (c) 2021 Facebook ifndef LIBBPFSTRSETH define LIBBPFSTRSETH  
Copyright (c) 2016 Facebook, Inc.  
Copyright (C) 2021 Facebook ifndef LIBBPFVERSIONH define LIBBPFVERSIONH  
Copyright (c) 2017 Facebook, Inc.  
Copyright (c) 2022 Chen Tao include <vmlinux.h>  
Copyright 2020 Facebook, Inc Licensed under the Apache License, Version 2.0 (the License)  
Copyright (c) 2020 zhenwei pi Licensed under the Apache License, Version 2.0 (the License)  
Copyright (c) 2018 Facebook  
Copyright (c) 2021 Hengqi Chen ifndef TCPSTATESH define TCPSTATESH  
Copyright (c) 2021 Chenyue Zhou.  
Copyright (c) 2017 Politecnico di Torino  
Copyright (c) 2021 Chenyue Zhou  
Copyright (c) 2016 Rudi Floren.  
Copyright (c) 2022 Krisztian Fekete  
Copyright (c) 2022 Chen Tao Based on ugc from BCC by Sasha Goldshtein  
Copyright (c) 2022 Jingxiang Zeng  
Copyright (c) 2008 Bernhard Walle <bernhard.walle@gmx.de>  
Copyright (c) Sasha Goldshtein Licensed under the Apache License, Version 2.0 (the License)  
Copyright 2016 Sasha Goldshtein Licensed under the Apache License, Version 2.0 (the License)  
Copyright (c) 2023 Wenbo Zhang include <argp.h>  
Copyright 2007-2009 Kitware, Inc.  
Copyright (C) 2020 Facebook  
Copyright (c) 2023 Wenbo Zhang include <vmlinux.h>  
Copyright (c) 2015 PLUMgrid, Inc.  
Copyright (c) 2021 Hengqi Chen include <vmlinux.h>  
Copyright (c) 2022 Hengqi Chen include <vmlinux.h>  
Copyright (c) 2023 Meta Platforms, Inc. and affiliates.  
Copyright (c) 2016 Jean-Tiare Le Bigot.  
Copyright (c) 2021 Yaqi Chen include <vmlinux.h>  
Copyright (c) 2022 Microsoft Corporation  
Copyright 2017-2020 Kinvolk GmbH  
Copyright 2016 Catalysts GmbH  
Copyright (c) 2016 PLUMgrid  
Copyright (c) 2016 PLUMgrid, Inc.  
Copyright (c) 2021 Facebook include <vmlinux.h>  
Copyright (C) 2021 Facebook  
Copyright (c) Clevernet Licensed under the Apache License, Version 2.0 (the License)  
Copyright (C) 2019 Facebook  
Copyright (c) 2020 Suchakra Sharma <mail@suchakra.in>  
Copyright (c) 2017 ShiftLeft Inc.  
Copyright (C) 2015 Wang Nan <wangnan0@huawei.com>  
Copyright (c) 2022 Rong Tao include <vmlinux.h>  
Copyright (c) 2021 Facebook include <stdint.h>  
Copyright (c) 2020 Netflix  
Copyright (c) 2020 Netflix include <vmlinux.h>  
Copyright (c) Facebook, Inc. and its affiliates.  
Copyright (c) 2023 zhenwei pi Licensed under the Apache License, Version 2.0 (the License)  
Copyright (c) 2019 Brendan Gregg.  
Copyright (c) Meta Platforms, Inc. and affiliates.  
Copyright (c) 2018 Jiri Olsa.  
Copyright (c) 2020 Anton Protopopov ifndef MAPHELPERSH define MAPHELPERSH  
Copyright (c) 2018 Andy Gospodarek Licensed under the Apache License, Version 2.0 (the License)  
Copyright (c) 2017 IBM Corporation  
Copyright (c) 2020 Anton Protopopov include <stdlib.h>  
Copyright (c) 2013-2015 PLUMgrid, http://plumgrid.com This program is free software; you can redistribute it and/or modify it under the terms of version 2 of the GNU General Public License as published by the Free Software Foundation.  
Copyright (c) 2015-2017 Daniel Borkmann  
Copyright (c) 2021, Oracle and/or its affiliates.  
Copyright (c) 2021 zhenwei pi Licensed under the Apache License, Version 2.0 (the License)  
Copyright (c) Facebook, Inc.  
Copyright (c) 2023 Wenbo Zhang  
Copyright (C) 2013-2015 Alexei Starovoitov <ast@kernel.org>  
Copyright (c) 2020 YoungEun Choe  
Copyright (c) 2015 The Libbpf Authors. All rights reserved.  
Copyright (c) 2019 Jugurtha BELKALEM.  
Copyright (c) 2018 Gary Lin Licensed under the Apache License, Version 2.0 (the License)  
Copyright (C) 2018 Facebook  
Copyright (C) 2018 Facebook Author: Yonghong Song <yhs@fb.com>  
Copyright (c) 2016 Sasha Goldshtein  
Copyright (c) Sasha Goldshtein, 2017 Licensed under the Apache License, Version 2.0 (the License)  
Copyright (C) 2015 Huawei Inc.  
Copyright (c) 2021 Facebook ifndef BASHREADLINEH define BASHREADLINEH  
Copyright (c) 2020 Anton Protopopov ifndef TCPCONNECTH define TCPCONNECTH  
Copyright (c) 2016 Brendan Gregg.  
Copyright (c) 20212022 Hengqi Chen include <vmlinux.h>  
Copyright (c) 2018 Facebook, Inc.  
Copyright (c) 2020 Anton Protopopov  
Copyright (c) Emilien Gobillot Licensed under the Apache License, Version 2.0 (the License)  
Copyright (c) 2020 Realtek, Inc.  
Copyright (C) 2017 Facebook Author: Roman Gushchin <guro@fb.com>  
Copyright (C) 2008-2011, Red Hat, Inc., Ingo Molnar  
Copyright 2016 Sasha Goldshtein  
Copyright (c) 2022 Rong Tao  
Copyright (c) 2021 Facebook include <argp.h>

**License:** ASL 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.