Open Source Used In dslink-java-rules-engine 1.0

Cisco Systems, Inc.

www.cisco.com

Cisco has more than 200 offices worldwide.
Addresses, phone numbers, and fax numbers
are listed on the Cisco website at
www.cisco.com/go/offices.

Text Part Number: 78EE117C99-188075590

This document contains licenses and notices for open source software used in this product. With respect to the free/open source software listed in this document, if you have any questions or wish to receive a copy of any source code to which you may be entitled under the applicable free/open source license(s) (such as the GNU Lesser/General Public License), please contact us at external-opensource-requests@cisco.com.

In your requests please include the following reference number 78EE117C99-188075590

Contents

1.1 Apache HttpClient 4.5.2
1.1.1 Available under license :

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

===

This project includes Public Suffix List copied from
<https://publicsuffix.org/list/effective_tld_names.dat>
licensed under the terms of the Mozilla Public License, v. 2.0

Full license text: <http://mozilla.org/MPL/2.0/>

Mozilla Public License Version 2.0
==================================

1. Definitions

1.1. "Contributor"
  means each individual or legal entity that creates, contributes to
  the creation of, or owns Covered Software.

1.2. "Contributor Version"
  means the combination of the Contributions of others (if any) used
  by a Contributor and that particular Contributor's Contribution.

1.3. "Contribution"
  means Covered Software of a particular Contributor.

1.4. "Covered Software"
  means Source Code Form to which the initial Contributor has attached
  the notice in Exhibit A, the Executable Form of such Source Code

Form, and Modifications of such Source Code Form, in each case
including portions thereof.

1.5. "Incompatible With Secondary Licenses"
means

(a) that the initial Contributor has attached the notice described
in Exhibit B to the Covered Software; or

(b) that the Covered Software was made available under the terms of
version 1.1 or earlier of the License, but not also under the
terms of a Secondary License.

1.6. "Executable Form"
means any form of the work other than Source Code Form.

1.7. "Larger Work"
means a work that combines Covered Software with other material, in
a separate file or files, that is not Covered Software.

1.8. "License"
means this document.

1.9. "Licensable"
means having the right to grant, to the maximum extent possible,
whether at the time of the initial grant or subsequently, any and
all of the rights conveyed by this License.

1.10. "Modifications"
means any of the following:

(a) any file in Source Code Form that results from an addition to,
deletion from, or modification of the contents of Covered
Software; or

(b) any new file in Source Code Form that contains any Covered
Software.

1.11. "Patent Claims" of a Contributor
means any patent claim(s), including without limitation, method,
process, and apparatus claims, in any patent Licensable by such
Contributor that would be infringed, but for the grant of the
License, by the making, using, selling, offering for sale, having
made, import, or transfer of either its Contributions or its
Contributor Version.

1.12. "Secondary License"
means either the GNU General Public License, Version 2.0, the GNU

Lesser General Public License, Version 2.1, the GNU Affero General
Public License, Version 3.0, or any later versions of those
licenses.

1.13. "Source Code Form"
means the form of the work preferred for making modifications.

1.14. "You" (or "Your")
means an individual or a legal entity exercising rights under this
License. For legal entities, "You" includes any entity that
controls, is controlled by, or is under common control with You. For
purposes of this definition, "control" means (a) the power, direct
or indirect, to cause the direction or management of such entity,
whether by contract or otherwise, or (b) ownership of more than
fifty percent (50%) of the outstanding shares or beneficial
ownership of such entity.

2. License Grants and Conditions

2.1. Grants

Each Contributor hereby grants You a world-wide, royalty-free,
non-exclusive license:

(a) under intellectual property rights (other than patent or trademark)
    Licensable by such Contributor to use, reproduce, make available,
    modify, display, perform, distribute, and otherwise exploit its
    Contributions, either on an unmodified basis, with Modifications, or
    as part of a Larger Work; and

(b) under Patent Claims of such Contributor to make, use, sell, offer
    for sale, have made, import, and otherwise transfer either its
    Contributions or its Contributor Version.

2.2. Effective Date

The licenses granted in Section 2.1 with respect to any Contribution
become effective for each Contribution on the date the Contributor first
distributes such Contribution.

2.3. Limitations on Grant Scope

The licenses granted in this Section 2 are the only rights granted under
this License. No additional rights or licenses will be implied from the
distribution or licensing of Covered Software under this License.
Notwithstanding Section 2.1(b) above, no patent license is granted by a
Contributor:

(a) for any code that a Contributor has removed from Covered Software;
or

(b) for infringements caused by: (i) Your and any other third party's
modifications of Covered Software, or (ii) the combination of its
Contributions with other software (except as part of its Contributor
Version); or

(c) under Patent Claims infringed by Covered Software in the absence of
its Contributions.

This License does not grant any rights in the trademarks, service marks,
or logos of any Contributor (except as may be necessary to comply with
the notice requirements in Section 3.4).

2.4. Subsequent Licenses

No Contributor makes additional grants as a result of Your choice to
distribute the Covered Software under a subsequent version of this
License (see Section 10.2) or under the terms of a Secondary License (if
permitted under the terms of Section 3.3).

2.5. Representation

Each Contributor represents that the Contributor believes its
Contributions are its original creation(s) or it has sufficient rights
to grant the rights to its Contributions conveyed by this License.

2.6. Fair Use

This License is not intended to limit any rights You have under
applicable copyright doctrines of fair use, fair dealing, or other
equivalents.

2.7. Conditions

Sections 3.1, 3.2, 3.3, and 3.4 are conditions of the licenses granted
in Section 2.1.

3. Responsibilities

3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any
Modifications that You create or to which You contribute, must be under
the terms of this License. You must inform recipients that the Source

Code Form of the Covered Software is governed by the terms of this
License, and how they can obtain a copy of this License. You may not
attempt to alter or restrict the recipients' rights in the Source Code
Form.

3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

(a) such Covered Software must also be made available in Source Code
   Form, as described in Section 3.1, and You must inform recipients of
   the Executable Form how they can obtain a copy of such Source Code
   Form by reasonable means in a timely manner, at a charge no more
   than the cost of distribution to the recipient; and

(b) You may distribute such Executable Form under the terms of this
   License, or sublicense it under different terms, provided that the
   license for the Executable Form does not attempt to limit or alter
   the recipients' rights in the Source Code Form under this License.

3.3. Distribution of a Larger Work

You may create and distribute a Larger Work under terms of Your choice,
provided that You also comply with the requirements of this License for
the Covered Software. If the Larger Work is a combination of Covered
Software with a work governed by one or more Secondary Licenses, and the
Covered Software is not Incompatible With Secondary Licenses, this
License permits You to additionally distribute such Covered Software
under the terms of such Secondary License(s), so that the recipient of
the Larger Work may, at their option, further distribute the Covered
Software under the terms of either this License or such Secondary
License(s).

3.4. Notices

You may not remove or alter the substance of any license notices
(including copyright notices, patent notices, disclaimers of warranty,
or limitations of liability) contained within the Source Code Form of
the Covered Software, except that You may alter any license notices to
the extent required to remedy known factual inaccuracies.

3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support,
indemnity or liability obligations to one or more recipients of Covered
Software. However, You may do so only on Your own behalf, and not on
behalf of any Contributor. You must make it absolutely clear that any
such warranty, support, indemnity, or liability obligation is offered by

You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

4. Inability to Comply Due to Statute or Regulation

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Software due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be placed in a text file included with all distributions of the Covered Software under this License. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

5. Termination

5.1. The rights granted under this License will terminate automatically if You fail to comply with any of its terms. However, if You become compliant, then the rights granted under this License from a particular Contributor are reinstated (a) provisionally, unless and until such Contributor explicitly and finally terminates Your grants, and (b) on an ongoing basis, if such Contributor fails to notify You of the non-compliance by some reasonable means prior to 60 days after You have come back into compliance. Moreover, Your grants from a particular Contributor are reinstated on an ongoing basis if such Contributor notifies You of the non-compliance by some reasonable means, this is the first time You have received notice of non-compliance with this License from such Contributor, and You become compliant prior to 30 days after Your receipt of the notice.

5.2. If You initiate litigation against any entity by asserting a patent infringement claim (excluding declaratory judgment actions, counter-claims, and cross-claims) alleging that a Contributor Version directly or indirectly infringes any patent, then the rights granted to You by any and all Contributors for the Covered Software under Section 2.1 of this License shall terminate.

5.3. In the event of termination under Sections 5.1 or 5.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or Your distributors under this License prior to termination shall survive termination.

```
************************************************************************
*                                       *
* 6. Disclaimer of Warranty                       *
* ------------------------                    *
*                                       *
* Covered Software is provided under this License on an "as is"    *
* basis, without warranty of any kind, either expressed, implied, or *
* statutory, including, without limitation, warranties that the    *
* Covered Software is free of defects, merchantable, fit for a    *
* particular purpose or non-infringing. The entire risk as to the   *
* quality and performance of the Covered Software is with You.    *
* Should any Covered Software prove defective in any respect, You   *
* (not any Contributor) assume the cost of any necessary servicing,  *
* repair, or correction. This disclaimer of warranty constitutes an  *
* essential part of this License. No use of any Covered Software is  *
* authorized under this License except under this disclaimer.     *
*                                       *
************************************************************************

************************************************************************
*                                       *
* 7. Limitation of Liability                      *
* -------------------------                    *
*                                       *
* Under no circumstances and under no legal theory, whether tort   *
* (including negligence), contract, or otherwise, shall any      *
* Contributor, or anyone who distributes Covered Software as      *
* permitted above, be liable to You for any direct, indirect,     *
* special, incidental, or consequential damages of any character   *
* including, without limitation, damages for lost profits, loss of  *
* goodwill, work stoppage, computer failure or malfunction, or any  *
* and all other commercial damages or losses, even if such party   *
* shall have been informed of the possibility of such damages. This  *
* limitation of liability shall not apply to liability for death or  *
* personal injury resulting from such party's negligence to the    *
* extent applicable law prohibits such limitation. Some        *
* jurisdictions do not allow the exclusion or limitation of      *
* incidental or consequential damages, so this exclusion and     *
* limitation may not apply to You.                  *
*                                       *
************************************************************************


8. Litigation
-------------

Any litigation relating to this License may be brought only in the
courts of a jurisdiction where the defendant maintains its principal
place of business and such litigation shall be governed by laws of that
```

jurisdiction, without reference to its conflict-of-law provisions.
Nothing in this Section shall prevent a party's ability to bring
cross-claims or counter-claims.

9. Miscellaneous

This License represents the complete agreement concerning the subject
matter hereof. If any provision of this License is held to be
unenforceable, such provision shall be reformed only to the extent
necessary to make it enforceable. Any law or regulation which provides
that the language of a contract shall be construed against the drafter
shall not be used to construe this License against a Contributor.

10. Versions of the License

10.1. New Versions

Mozilla Foundation is the license steward. Except as provided in Section
10.3, no one other than the license steward has the right to modify or
publish new versions of this License. Each version will be given a
distinguishing version number.

10.2. Effect of New Versions

You may distribute the Covered Software under the terms of the version
of the License under which You originally received the Covered Software,
or under the terms of any subsequent version published by the license
steward.

10.3. Modified Versions

If you create software not governed by this License, and you want to
create a new license for such software, you may create and use a
modified version of this License if you rename the license and remove
any references to the name of the license steward (except to note that
such modified license differs from this License).

10.4. Distributing Source Code Form that is Incompatible With Secondary
Licenses

If You choose to distribute Source Code Form that is Incompatible With
Secondary Licenses under the terms of this version of the License, the
notice described in Exhibit B of this License must be attached.

Exhibit A - Source Code Form License Notice

This Source Code Form is subject to the terms of the Mozilla Public
License, v. 2.0. If a copy of the MPL was not distributed with this
file, You can obtain one at http://mozilla.org/MPL/2.0/.

If it is not possible or desirable to put the notice in a particular
file, then You may include the notice in a location (such as a LICENSE
file in a relevant directory) where a recipient would be likely to look
for such a notice.

You may add additional accurate notices of copyright ownership.

Exhibit B - "Incompatible With Secondary Licenses" Notice

This Source Code Form is "Incompatible With Secondary Licenses", as
defined by the Mozilla Public License, v. 2.0.
Apache HttpComponents Client
Copyright 1999-2016 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (http://www.apache.org/).

1.2 Bouncy Castle 1.60

1.2.1 Available under license :

<html>
<body bgcolor=#ffffff>

Copyright (c) 2000-2018 The Legion of the Bouncy Castle Inc. (http://www.bouncycastle.org)
<p>
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:
<p>
The above copyright notice and this permission notice shall be included in all copies or substantial
portions of the Software.
<p>
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.

</body>

</html>

<html>

<object bgcolor=#ffffff>

The following organisations and people have contributed to the Bouncy Castle Cryptography Package.

<p>

Thanks, may your castles never deflate!

<p>

Donors

<p>

The following people donated financially to help with the release of 1.60:

Jens Neuhalfen and perillamint.

</p>

<p>

The following people donated financially to help with the release of 1.59:

Brian Reid.

</p>

<p>

The following people and organisations donated financially to help with the release of 1.57:

Joop Kaashoek and Pexus LLC.

</p>

<p>

We also wish to acknowledge financial and collaborative support from CISCO and additional financial support from PrimeKey towards developing the EST API for RFC 7030 support.

</p>

<p>

The following people and organisations donated financially to help with the release of 1.56:

DidiSoft, Cotiviti, Atanas Krachev, Encryptomatic LLC, LogicalAnswersIncSupporter

</p>

<p>

The following people and organisations donated financially to help with the release of 1.55:

Digistamp, RAM NAG

</p>

<p>

The following people and organisations donated financially to help with the release of 1.54:

Lobster GmbH

</p>

<p>

The following people and organisations donated financially to help with the release of 1.53:

Sheba, Ishmal Bartley, and Li-Chang Johnny Lo
</p>
<p>
The following people and organisations donated financially to help with the release of 1.52:

lecker&#064buetterchen.de, Charles Proxy, Gunny Mills, Morgan Le Douget, Ben Whitaker, and Emilio Navarrete Lineros.
</p>
<p>
The following people and organisations donated financially to help with the release of 1.51:

Gup & Boz @ Alki Seattle, Bytemine Gmbh, Ted Pennings, Atanas Krachev, PrimeKey Solutions AB, Martin Paljak, CorseraFri19980116, CPU Terminator, Lindsay Bradford, kares, Philius, and Aaron Anderson.
</p>
<p>
Organisations
</p>

Holders of Crypto Workshop Support Contracts. Without the consulting time left over from support contracts being contributed back to working on the Bouncy Castle APIs, progress would be impossible. You know who you are!
Atlassian Software Systems donation of Confluence and JIRA licences.
Grier Forensics, for collaborating in the development of the S/MIME Toolkit and DANE SMIMEA functionality.
TU-Darmstadt, Computer Science Department, RBG, for the initial
lightweight client side TLS implementation, which is based on MicroTLS. MicroTLS was developed
by Erik Tews under the supervision of Dipl.-Ing.
Henning Baer and Prof. Max Muehlhaeuser.

TU-Darmstadt, Computer Science Department, RBG, for the initial
Post Quantum provider, which was based on the FlexiProvider. The FlexiProvider was developed
by the Theoretical Computer Science Research Group at TU-Darmstadt, Computer Science Department, RBG under
the supervision of Prof. Dr. Johannes Buchmann. More information on the history of FlexiProvider can be found at:
http://www.flexiprovider.de/

Voxeo Labs - sponsorship of the initial development of APIs for DTLS 1.0 (RFC 4347), DTLS-SRTP key negotiation (RFC 5764),
and server side TLS 1.1 (RFC 4346) and tested WebRTC compatibility. More information on Voxeo Labs can be found at http://voxeolabs.com
Core Infrastructure Initiative - financial support towards developing the TLS API and JSSE provider that appeared in 1.56.
Additional CertPath testing and validation data from the CertPath testing tool developed by cryptosource GmbH and media Transfer AG both located in Darmstadt, Germany.
Micro Focus - additional support towards further developing the

TLS/DTLS API and the BCJSSE provider.

<p>
People
</p>

Tito Pena <Fortunato.Pena@AdNovum.CH> - initial RC5 implementation
Michael Lee <yfl@mira.net> - initial RC6 implementation, MD2 implementation
Nuno Santos <nsantos@student.dei.uc.pt> - finding toString bug in certificate object.
Brett Sealey <bretts@mortbay.com> - fixing the missing return problem in JDKKeyFactory (affected SSLeay private keys).
Victor A. Salaman <salaman@teknos.com> - fixing the bug in Cipher.java which caused it to ignore specified providers, fixing the bug in RSAKeyGenerator which caused keys to be occasionally produced 1 bit too small.
Eran Librach <eranl@valicert.com> - spotting and fixing the classLoader bug that occurs if javax.crypto and the provider aren't sharing the same classpath (occurs in JDK 1.3 and greater).
Jonathan Knudsen <jonathan@LearningPatterns.com> - porting
information and restrictions when using the lightweight library with the
MIDP environment.
Markus Niedermann <markus.niedermann@softwired-inc.com> - porting
information and restrictions when using the lightweight library with the
MIDP environment.
Mike Benham <moxie@thoughtcrime.org> - detection and fixing of an
incorrect weak key in the DES key generation support classes. Suggestions
for simplifying DESedeParameter objects. Optimisations for the Blowfish engine
and BufferedBlockCipher class.
Soren Hilmer <hilmer@mail.tele.dk> - initial implementation of
netscape certificate request classes.
Uwe Guenther <uwe@cscc.de> - detection and fixing of 3 incorrect semi-weak keys in the DES key
generation support classes.
Markus Bradtke <mab@informatik.uni-kiel.de> - fixing of a logic
error in the JDKKeyStore class.
Waclaw Sierek <waclaw.sierek@tpg.pl> - fix to setOddParity in
the DESParameter class. Assistance with adding ordering to X509 names for
certificate generation, proper processing of byte strings in the ASN1
package, further simplifications and additional classes to improve pkcs7
support, bug fixes in CertPath API.
Ly-Na Phu <lyna.phu@init-consulting.de> - assistance in the
addition of ISO 9796-1 padding.
Stefan Köpsell <sk13@mail.inf.tu-dresden.de> - making the jdk 1.1
version of the collections API available. For further details see
http://sourceforge.net/projects/jcf/
Carmen Bastiaans <cbastiaa@microbits.com.au> - fixing the improper
null pointer problem in the setting of certificates in the PKCS12 key store.
Tomas Gustavsson <tomasg@primekey.se> - initial implementation of the AuthorityInformationAccess,
SubjectKeyIdentifier, AuthorityKeyIdentifier, CRLNumber, CRLReason, CertificatePolicies,
V2TBSCertListGenerator, and X509V2CRLGenerator classes in the ASN.1 library. Additions to GeneralName
class, other bug fixes in the X.509 package. Initial implementation of the CertificationRequest classes.

getRevocationReason() patch for OCSP. Patch to SemanticsInformation to prevent ClassCastException.
Eugen Kuleshov <euxx@hotmail.com> - optimisations for Blowfish, assistance with PKCS12/keytool
interoperability.
Megan Woods <meganwoods@sekurafile.com> - initial implementation of
ECIES.
Christian Geuer-Pollmann <geuerp@apache.org> -
adding IV's to the AESWrap implementations. Initial implementation of
DESedeWrap.
Michael Mühle <michael@mouling.de> - contributing the initial CertPath implementation and
compatibility classes, fixing provider bug in JDK 1.1 java.security.cert.CertificateFactory compatibilty class.
Michael Mansell <me@michaelmansell.com> - fixing the parsing of the empty DER set in the ASN.1
library.
Eike Recker <eike.recker@gmx.de> - fixing misspelling of provider reference for RSA/1 and RSA/2.
Chris Southern <CSouthern@baltimore.com> - fixing misuse of specified provider in the PKCS10
certification request class.
Sidney Markowitz <sidney@sidney.com> - fixing null pointed exception on unknown OID in X509Name
class, initial implementation of the three AES engines.
Chris Kerr <ckerr@filonet.ca> - initial implementation of the cms,
asn1.cms, and the mail/smime packages,
assistance in simplifying the ASN.1 package, miscellaneous other optimisations,
NIST CertPath certification test, PKIXPolicyNode class, CertPath subtree validation and policy tree construction.
We also
wish to acknowledge the generosity of Filonet
Corporation for allowing Chris to make the initial cms and mail/smime packages available to us.
Mike Bean <mbean@lucentradius.com> - fixing the fall through bug
in the IV algorithm parameters class.
Martin Petraschek <e9526225@student.tuwien.ac.at> - fixing ASN1
tagging so tag values up to 30 are now supported.
Jess Garms <jgarms@yahoo.com> - fixing 112/168 key size bug for
DESede key generation.
Mike Bremford <mike@big.faceless.org> - contributing the inital PKCS7 implementation.
Shankar Srinivasan <ssr002@yahoo.com> - S/Mime interoperability testing and debugging.
Stef Hoeben <ilsestef@skynet.be> - adding Montgomery multiplication to the BigInteger class.
Klaudiusz Ciosk <kciosk@max.com.pl> - improving the compatibility of
the SMIME package with the Sun JCE.
Thomas Houtekier <Thomas.Houtekier@tectrade.net> - S/Mime testing and debugging. Interoperability
with
Biztalk.
Don Hillsberry <hillsber@dialcorp.com> - S/Mime testing and debugging.
Kazuo Furuya <kfuruya@infoteria.co.jp> - fixing root certificate chaining bug in PKCS12 key store.
Jason Novotny <jdnovotny@lbl.gov> - initial work on the openSSL PEM processing.
Joel Hockey <joel.hockey@qsipayments.com> - initial work on the openSSL PEM processing.
John Steenbruggen <JohnS@geotrust.com> - fixing CertificationRequestInfo to handle cert request info
objects without attribute blocks.
Justin Chapweske <justin@chapweske.com> - ordering patch for Tiger message digest.
John Serock <jserock@hotmail.com> - fixing null pointer exception
in constructor for ExtendedKeyUsage. Fixing of base OID bug in KeyPurposeId.
Compliance of KeyUsage extension return value with security API.

Sascha Weinreuter <Sascha.Weinreuter@cit.de> - fixed SMIME saveChanges() bug.
Andre Wehnert <aw5@mail.inf.tu-dresden.de> - fixing key schedule problem in RC5-64, fixing buffer cleaning issue in buffered block cipher.
Luigi Lo Iacono <lo_iacono@nue.et-inf.uni-siegen.de> - adding SIC mode to the blockciphers in the provider.
Tim Sakach <tsakach@certivo.net> - SMIME v2 compatibility patches.
Marcus Povey <mpovey@brookes.ac.uk> - adding the PGP mode to the lightweight API and the provider.
Sebastian Clauß <sc2@inf.tu-dresden.de> - adding randomness setting to the certificate and CRL generators.
Nicolas Bielza <nicolas.bielza@alligacom.com> - isolating the tagging bug in the ASN.1 library that was misrepresenting some ASN.1 constructed data types. Contributions to the streaming S/MIME classes.
Casey Marshall <rsdio@metastatic.org> - fixing the clone problem with Macs in the clean room JCE.
Rick Zeldes <rick.zeldes@eds.com> - initial code for CMS/SMIME CompressedData.
Jarek Gawor <gawor@mcs.anl.gov> - fixing ASN.1 sequence unpacking in BasicConstraints constructor.
Brett Neumeier <random@rnd.cx> - patch to OriginatorIdentifierOrKey object, improvements to encoders package, introduction of UrlBase64.
Graham Coles <graham.coles@retail-logic.com> - patch to isParityAdjusted in DESKeySpec.
Jörn von Kattchée <J.Kattchee@seeburger.de> - patch to SMIMEGenerator for preventing class cast exceptions with BodyParts containing Multipart objects.
Matteo Artuso <matartuso@libero.it> - picking up the possible overead in ASN1InputStream.
Julian Morrison <julian@extropy.demon.co.uk> - spotting the slow down in Diffie-Hellman key generation.
Elmar Sonnenschein <eso@esomail.de> - fix to long conversion in clean room SecureRandom.
Jörn Schwarze <JSchwarze@ulc.de> - Locale fix for the clean room JCE.
Bryan Lovquist <bkl@cps.com.au> - Other provider compatibility fixes for CMS signing.
Artem Portnoy <Artem_Portnoy@ibi.com> - generalisations for CMSProcessableBodyPart in S/MIME. Header fix for mime messages.
Michael Häusler <haeusler&#064ponton-consulting.de> - missing OID update for SHA1 with RSA Signature.
Johan Seland <johans&#064netfonds.no> - general toString for BigInteger class.
Johannes Nicolai <johannes.nicolai&#064novosec.com> - further enhancements to OCSP response generation, fix to CertificateID issuer.
Marc Doberva <marc.doberva&#064ilex-si.com> - help in isolating the JSSE/BC RSA key issue.
Jan Dvorak <jan.dvorak&#064mathan.cz> - initial implementation of the light weight Null block cipher.
Joe Cohen <jcohen&#064forumsys.com> - converting the ArrayOutOfBoundsException in DERInputStream into what it should have been.
Chris Long<aclong&#064ece.cmu.edu> - adding public key decoding to PEMReader.
Hes Siemelink<hes&#064izecom.com> - findIssuer fix for CertPathBuilder, toMimeMessage converter for Mail API, getSize() fix for zero length messages in SMIMEMessage.
Stefan Puiu<stefanpuiuro&#064yahoo.com> - initial implementation V3 policy mapping, policy qualifier objects in ASN.1 X.509 package.
Kaiser Yang <kaiseryang@yahoo.com> - Finding BigInteger loop problem in prime generation.
Jiri Urbanec <jiri.urbanec&#064logicacmg.com> - patch to fix defect in DERBMPString.equals().
Justin Kolb <jkolb&#064pristx.com> - patch to DSA signature generation in OpenPGP. Fix for the unexpected "Unexpected end of ZLIB input stream" exception.

Ralf Hauser <ralfhauser&#064gmx.ch> - patch to exception handling in PublicKeyRing, PEMReader, 1.4 build script, X509 Certificate Factory, CertPathValidatorUtilities, fromAddress null check in SignedMailValidator.
Michal Dvorak <M_Dvorak&#064kb.cz> - getNextUpdate patch for OCSP SingleResp.
Klaus Greve Fiorentini <Klaus&#064cpqd.com.br> - array fix in PGP PublickKeyEncSessionPacket.
Olivier Refalo <Olivier_Refalo&#064fpl.com> - null pointer exception fix for JDK 1.3 CMSSignedData objects.
Mariusz Bandola <mariusz.bandola&#064cryptotech.com.pl> - patch to DERGeneralizedTime. Compliance patch for OCSP TBSRequest class. Patch to X509Name for delaing with general objects in sequences.
Brien Oberstein <brien.oberstein&#064transacttools.net> - patch to S2K algorithm in OpenPGP, initial PGP version 3 secret key support, initial PGP version 3 signature generation, RIPEMD160 addition to PGPUtil.
Ian Haywood <ian&#064haywood.bpa.nu> - addition of getSignatureType to PGPSignature.
Jonathan Edwards <s34gull&#064mac.com> - initial support for reading multiple rings from a PGP key file.
Andrew Thornton <andrew&#064caret.cam.ac.uk> - patch for RSA PUBLIC KEY in PEMReader.
Gregor Leander <gl&#064bos-bremen.de> - initial parsing of multiple sequence entries in an X.500 Name.
Antoon Bosselaers <Antoon.Bosselaers&#064esat.kuleuven.ac.be> - help with RipeMD320 implementation.
Peter Sylvester <Peter.Sylvester&#064edelweb.fr> - improvements to the ASN.1 BasicConstraints object.
Doug <ummmmm&#064myrealbox.com> - addition of isEncryptionKey method to OpenPGP public keys.
Francois Staes <fstaes&#064netconsult.be> - improvements to DEBitString, DERGeneralizedTime and initial implimentation of DERGeneralString, addition of settable signed object info to CMSSignedDataGenerator, patch to DH key agreement.
W.R. Dittmer <wdittmer&#064cs.vu.nl> - patch to decoding of SignatureCreationTime in BCPG. Patch to PGPKeyPair to fix nullpointer exception.
Perez Paz Luis Alberto <laperez&#064banxico.org.mx> - patch to use of BitString in X.500 name.
James Wright <James_Wright&#064harte-hanks.com> - patches for dealing with "odd" ArmoredInputStreams.
Jim Ford <jim&#064muirford.com> - patch to PGPSecretKey to avoid null pointer exception on encoding secret keys, comments on KeyExpirationTime, getBitStrength for ElGamal keys. Signature creation time patch for newly created v4 signatures.
Michael Hausler <haeusler&#064ponton-consulting.de> - extra aliases for provider.
Sai Pullabhotla <psai&#064linoma.com> - fix to PGP compressed data generator to improve compression levels. Performance improvements for KeyBasedLargeFileProcessor.
Joseph Miller <joseph&#064digiweb.net.nz> - addition of ZeroBytePadding.
Lars <xyz&#064sagemdenmark.dk> - patch to explicit padded mode for CBC block cipher MAC.
Jeroen van Vianen <jeroen&#064vanvianen.nl> - the Signed and Encrypted mail example.
Jun Sun <JSun&#064diversinet.com> - patch to SecureRandom to work around problem in wtk 1.0.4 and wtk 2.1.
Petr Dukem <pdukem&#064email.cz> - patch to CMSSignedDataGenerator to allow it to work with PKCS11 providers.
Filipe Silva <filipe.silva&#064wedoconsulting.com> - patch to fix overead issue in BCPGInputStream.
Alpesh Parmar <alps&#064linuxmail.org> - patch for class cast problem in PGPPublicKey.getSignatures().
Jay Gengelbach <jgengelbach&#064webmethods.com> - patch to fix isSigningKey in PGPSecretKey class, patch to hashedPackets in PGP signatureGenerator, initial cut for indefinite length output.
Doug <doug&#064tigerprivacy.com> - public key ring patches for ElGamal Signatures, problem key ring data.
Matthew Mundy <mmundy1&#064umbc.edu> - infinite loop prevention patch to PKCS5S2ParametersGenerator.

Tom Cargill <cargill&#064profcon.com> - spelling patch in provider.
Breitenstrom Christian <C.Breitenstrom&#064t-systems.com> - compatibility patch to SignaturePacket,
DetachedSignatureProcessor.
Zanotti Mirko <zanotti&#064cad.it> - patch to ordered equality test for X509Name.
Nicola Scendoni <nscendoni&#064babelps.it> - patch to add sorting to CertPath validation.
Ville Skyttä <ville.skytta&#064iki.fi> - patch to CRLDistPoint for cRLIssuer field. KeyStore compliance
on add patches. DiffieHellman patch for provider compliance. Support for PEM object "TRUSTED
CERTIFICATE". Exception handling patch in PEMReader. JavaDoc clean up.
Bruce Gordon <bruce.gordon&#064savvis.net> - patch to secret key creation encoding NullPointerException in
OpenPGP, speed up for BCPGInputStream.
Miles Whiteley <Miles.Whiteley&#064savvis.net> - "223" fix for BCPGInputStream new packets.
Albert Moliner <amoliner&#064evintia.com> - initial TSP implementation.
Carlos Lozano <carlos&#064evintia.com> - initial TSP implementation, patch to SignerInformation for
supporting repeated signers, initial updates for supporting repeated attributes in CMS.
Javier Delgadillo <javi&#064javi.codewarp.org> - initial Mozilla PublicKeyAndChallenge classes.
Joni Hahkala <joni.hahkala&#064cern.ch> - initial implementations of VOMS Attribute Certificate Validation,
IetfAttrSyntax, and ObjectDigestInfo. We also wish to thank the EGEE
project for making the work available.
Rolf Schillinger<rolf&#064sir-wum.de> - initial implementation of Attribute Certificate generation.
Sergey Bahtin <Sergey_Bahtin&#064yahoo.com> - fix for recovering certificate aliases in BKS and UBER key
stores. Initial implementations of GOST-28147, GOST-3410, EC GOST-3410, GOST OFB mode (GOFB) and
GOST-3411.
Franck Leroy <Franck.Leroy&#064keynectis.com> - ANS.1 set sorting. Contributions to TSP implementation.
Test vectors for Bleichenbacher's forgery attack.
Atsuhiko Yamanaka <ymnk&#064jcraft.com> - patch for improving use of Montgomery numbers in BigInteger
library. Patch to use size of private exponent in DH parameters.
Nickolay Bolshackov <tyrex&#064reksoft.ru> - patch for class cast exception in AuthorityInformationAccess
class.
Soren Hilmer <soren.hilmer&#064tietoenator.com> - patches for CertID with issuerSerial set in TSP
implementation, additional compliance testing.
Steve Mitchell <mitchell&#064intertrust.com> - patch for stateful path validator fix. Patch to allow BigInteger
class to create negative numbers from byte arrays. Additions to allow different providers to be used for
asymmetric/symmetric encryption in OpenPGP.
Optimisation to avoid redundant verification in path validator. Suggestion to use PKIXParameters.getSigProvider()
correctly.
Dirk Eisner <D.Eisner&#064seeburger.de> - initial implementation of ISO 78164-4 padding.
Julien Pasquier <julienpasquier&#064free.fr> - initial implementation of attribute classes from RFC 3126. Fix
to KEKIdentifier, OtherKeyAttribute parsing. Initial ContentHints class.
Matteo <matartuso&#064libero.it> - sequence patch to ASN1Dump.
Andrew Paterson <andrew.paterson&#064burnsecs.com> - patches to PGP tools, isRevoked method on
PGPPublicKey.
Vladimir Molotkov <vladimir.n.molotkov&#064intel.com> - extensive provider exception handling compliance
testing.
Florin Kollan <adlocflo&#064web.de> - fix to ElGamalKeyParameters equality testing.
Pavel Vassiliev <paulvas&#064gmail.com> - Initial GOST28147Mac implementation.
Tom Pesman <tom&#064tnux.net> - addition of DES-EDE encryption for RSAPrivate keys to PEMWriter.
Lukasz Kowalczyk <lukasz.b.kowalczyk&#064gmail.com> - patch to fix parsing issue with OpenSSL PEM
based certificate requests.

- Arndt Hasch <Arndt.Hasch&#064maxence.de> - additional fix for partial reading with new style PGP packets.
- Fix Bernd (KCDP 11) <bernd.fix&#064credit-suisse.com> - fix for 31 byte issue and exception throwing by Whirlpool.
- David M. Lee <dmlee&#064Crossroads.com> - code for add and remove secret key in the PGPSecretKeyRing class. Additions to S/MIME and CMS unit tests.
- Mike Dillon <md5&#064embody.org> - additional checks for PGP secret and public key construction, patches to copyWithNewPassword.
- tu-vi cung <t2cung&#064hotmail.com> - patch for out of bounds problem in getDecoderStream method.
- Chris Schultz <cschultz&#064gmail.com> - fix for InputStream constructor for X509V2AttributeCertificate.
- David M. Lee <dmlee&#064Crossroads.com> - implementation assistance with streaming CMS classes.
- Joel Rees <rees&#064ddcom.co.jp> - fix to correct getOID methods from returning same set on X.509 attribute certificates.
- Francesc Sau <francesc.sau&#064partners.netfocus.es> - micro fix for tsp Accuracy class.
- Larry Bugbee <bugbee&#064mac.com> - initial ECNR implementation.
- Remi Blancher <Remi.Blancher&#064keynectis.com> - Contributions to TSP implementation. Initial implementation of RFC 3739 and ICAO ASN.1 classes.
- Brian O'Rourke <brianorourke&#064gmail.com> - patch for signature creation time override in OpenPGP.
- Andreas Schwier <andreas.schwier&#064cardcontact.de> - initial implementation of ISO9797 MAC Algorithm 3, addition of DES-EDE 64 MAC to the provider, fix to EC point encoding, addition of EC and RSA-PSS OIDs to CMS, addition of AES-CMAC and DESede-CMAC to JCE provider.
- David Josse <david.josse&#064transacttools.net> - Patch for trailer function in version 2 signature packets.
- Kishimoto Kazuhiko <kazu-k&#064hi-ho.ne.jp> - RFC 3280 updates to policy processing in the CertPath validator. Additional test data not covered by NIST.
- Lawrence Tan <lwrnctan&#064gmail.com&gt - Large field OID sample test data. Missing key types in JDKKeyFactory.
- Carlos Valiente <superdupont&#064gmail.com> - Addition of CRL writing to the PEMWriter class.
- Keyon AG, Martin Christinat, http://www.keyon.ch - fixing incorrect ASN.1 encoding of field elements in X9FieldElement class.
- Olaf Keller, <olaf.keller.bc&#064bluewin.ch> - initial implementation of the elliptic curves over binary fields F2m. Additional tests and modifications to elliptic curve support for both F2m and Fp. Performance improvements to F2m multiplication. Initial implementation of WNAF/WTNAF point multiplication. Improvement to k value generation in ECDSA.
- Jörg Eichhorn <eichhorn&#064ponton-consulting.de> - patch to fix EOF read on SharedFileInputStream, support for F2m compression.
- Karsten Ohme <widerstand&#064t-online.de> - initial check against for out of range data on non byte aligned RSA keys. Addition of equals/hashCode on ECCurve.Fp. Additional curve type support for Fp, contributions to F2m compression. F2m decoding for ECPointUtil. Infinity fix and prime192v2 fix for Fp. Extra validation for RSA key creation. Fix to name typos for some OpenSSL key generators. RFC-1779 table, improved RFC 2253 compliance for X509Name. Additional constructor validation for X.509/ESS ASN.1 classes. Validation for Printable, IA5, and Numeric Strings.
Support for surrogate pairs in DERUTF8String, DER UTF8 test. Additional X.509 name attributes for ISIS-MTT, RFC 3039, addition of indirect CRL support, initial X509 LDAP CertStore implementation, CertificatePair class, and X509CertificatePair class. Contributions to X509Store/Parser infrastructure and design.
CertPath support for implicit DSA parameters and a range of NameConstraints. Addition of support for V1 attribute certificates and attribute certificate path validation. Initial classes for ASN.1 ISIS-MTT support. Enhancements for improving compliance with the NIST CertPath tests.

Carlos Lozano Ruiz <carlos&#064tradise.com> - patch for <ctrl><m> only handling in CRLFOutputStream.
John Alfred Prufrock <j.a.prufrock&#064gmail.com> - mods to GOST-3411 and MD2 to support ExtendedDigest.
Stefan Neusatz Guilhen <sneusatz&#064gmail.com> - initial version of RoleSyntax, improvements to AttributeCertificateHolder and AttributeCertificateIssuer.
Marzio Lo Giudice <marzio.logiudice&#064gmail.com> - fix to endianess in KDF2BytesGenerator, additional KDF2 tests.
Georg Lippold <georg.lippold&#064gmx.de> - initial implementation of NaccacheStern cipher.
Chris Viles <chris_viles&#064yahoo.com> - fix to SignatureSubpacket critical bit setting.
Pasi Eronen <Pasi.Eronen&#064nokia.com> - extra toString() support for ASN.1 library. Initial patch for large OID components.
Lijun Liao <https://github.com/xipki> performance enhancements for SHA family of digests. Bug report and patch for blank line handling in ArmoredInputStream. Addition of getSignatureAlgorithmID to BasicOCSPResp. Reset fix for SM2 signatures, performance improvements for SHA-3. Clean up of CMP EncryptedValueBuilder, additional functionality on PollReqContent.
Maria Ivanova <maria.ivanova&#064gmail.com> - support for tags > 30 in ASN.1 parsing.
Armin Häberling <arminha&#064student.ethz.ch> - first cut of internationalisation, initial PKIX validation classes.
Marius Schilder <mschilder&#064google.com> - main set of test vectors for Bleichenbacher's forgery attack.
Xavier Le Vourch <xavier&#064brittanysoftware.com> - general code clean ups.
Erik Tews <e_tews&#064cdc.informatik.tu-darmstadt.de> - initial threaded random seed generator, constant-time PKCS#1.5 decoding
Thomas Dixon <reikomusha&#064gmail.com> - initial implementations of TEA/XTEA, Salsa20, ISAAC, and Noekeon. XTEA enhancements.
Frank Cornelis <info&#064frankcornelis.be>- addition of crlAccessMethod in X509ObjectIdentifiers.
Rui Joaquim <rjoaquim&#064cc.isel.ipl.pt> - initial implementation of RSA blinding for signatures.
David Stacey <DStacey&#064allantgroup.com> - addition of trust packet checking on revocation signatures in PGPSecretKeyRing.
Martijn Brinkers <list&#064mitm.nl> - better exception handling in CMS enveloping, "just in time" modifications for CRL and Sequence evaluation.
Julius Davies <juliusdavies&#064gmail.com> - additional modes and algorithm support in PEMReader
Matthias <g&#064rtner.de> - GnuPG compatibility changes for PBEFileProcessor.
Olga Käthler <olga.kaethler&#064hjp-consulting.com> - initial implementation of TeleTrusT EC curves, additional ISO 9797 MACs, contributions to EAC OIDs, addition of EAC algorithms to CMS Signing.
Germano Rizzo <germano.rizzo&#064gmail.com> - initial implementation of CMac, EAX, HC-128, and HC-256, optimisations for Salsa20.
Núria Marí <numaa&#064hotmail.com> - patch for alternate data type recoginition in CMSSignedDataParser.
Janis Schuller <js&#064tzi.de> - addition of NotationData packets for OpenPGP.
Michael Samblanet <mike&#064samblanet.com> - patches towards improved Sun/default provider support in CMS.
Mike StJohns <mstjohns&#064comcast.net> - patches for supporting empty subject in X.509 certificate generation, noneWithECDSA, updates to KeyPurposeId.
Ramon Keller <ramon.keller&#064gmx.ch> - patch to deal with null revocations return from other CRL in X509V2CRLGenerator.
Mark Nelson <mark&#064nbr.com> - correction to excluded DN in name constraints processing for PKIX

processing.
Eugene Golushkov <eugene_gff&#064ukr.net> - mask fix to single byte read in TlsInputStream.
Julien Pasquier <julienpasquier&#064free.fr> - additional classes for supporting signature policy and signer certificates in the ASN.1 esf and ess libraries.
Peter Knopp <pknopp&#064mtg.de> - fix for named curve recognition in ECGOST key generation.
Jakub Gwozdz <gwozdziu&#064rpg.pl> - addition of getTsa() to TimeStampTokenInfo.
Bartosz Malkowski <bmalkow&#064tigase.org> - initial implementation of VMPC cipher, VMPCRandomGenerator, VMPCMac.
Tal Yacobi <tal.yacobi&#064octavian-tech.com> - fix for issue in OpenPGP examples [#BJA-55].
Massimiliano Ziccardi <massimiliano.ziccardi&#064gmail.comt> - support for counter signature reading in CMS API, update for multiple counter signature attributes.
Andrey Pavlenko <andrey.a.pavlenko&#064gmail.com> - security manager patch for PKCS1Encoding property check.
J Ross Nicoll <jrn&#064jrn.me.uk> - improved exception handling for getInstance() in ASN.1 library.
Matthew Stevenson <mavricknz&#064yahoo.com> - patch to construtor for CRMF CertSequence.
Gabriele Contini <gcontini&#064hotpop.com> - identified a bug in ASN.1 library with handling of unterminated NDEF's.
Roelof Naude <roelof.naude&#064epiuse.com> - patch for TLS client to send empty client certs in response to HP_CERTIFICATE_REQUEST.
Patrick Peck <peck&#064signaturen.at> - identified problem with DERApplicationSpecific and high tag numbers in ASN.1 library.
Michael LeMay <lemaymd&#064lemaymd.com> - identified problem with EAX [#BJA-93].
Alex Dupre <ale&#064FreeBSD.org> - fix to use of Signature rather than SignatureSpi in provider [#BJA-90]. Addition of null provider use to SignedPublicKeyAndChallenge and PKCS10CertificationRequest [#BJA-102]
Michael Schoene <michael&#064sigrid-und-michael.de> - fix of improper handling of null in ExtendedPKIXParameters.setTrustedACIssuers(), check for V2 signingCertificate attribute in TimeStampResponse.validate().
Ion Larrañaga <ilarra&#064s21sec.com> fix to default partial packet generation in BCPGOutputStream.
Bob Kerns <bob.kerns&#064positscience.com> fix to hashCode for X509CertificateObject.
Stefan Meyer <stefan.meyer&#064ewe.de> backport for PKIXCertPathValidotor and SMIMESignedMailReviewer.
Robert J. Moore <Robert.J.Moore&#064allanbank.com> speedups for OpenPGPCFB mode, clean room JCE patches.
Rui Hodai <rui&#064po.ntts.co.jp> speed ups for Camellia implementation, CamelliaLightEngine.
Emir Bucalovic <emir.bucalovic&#064mail.com> initial implementation of Grain-v1 and Grain-128.
Torbjorn Svensson <tobbe79&#064gmail.com> initial implementation of Grain-v1 and Grain-128.
Paul FitzPatrick <bouncycastle_pfitz&#064fitzpatrick.cc> error message fix to X509LDAPCertStoreSpi, comparison fix to BCStrictStyle.
Henrik Andersson <k.henrik.andersson&#064gmail.com> addition of UniqueIssuerID to certificate generation.
Cagdas Cirit <cagdascirit&#064gmail.com> subjectAlternativeName fix for x509CertStoreSelector.
Harakiri <harakiri_23&#064yahoo.com> datahandler patch for attached parts in SMIME signatures.
Pedro Henriques <pmahenriques&#064gmail.com> explicit bounds checking for DESKeyGenerator, code simplification for OAEPEncoding.
Lothar Kimmeringer <job&#064kimmeringer.de> verbose mode for ASN1Dump, support for DERExternal.
Richard Farr <rfarr.se&#064gmail.com> initial SRP-6a implementation.

Thomas Castiglione <castiglione&#064au.ibm.com> patch to encoding for CRMF OptionalValidity.
Elisabetta Romani <eromani&#064sogei.it> patch for recognising multiple counter signatures.
Robin Lundgren <r737lundgren&#064gmail.com> CMPCertificate constructor from X509CertificateStructure fix.
Petr Kadlec <mormegil&#064centrum.cz> fix to sign extension key and IV problem in HC-128, HC-256.
Andreas Antener <antener_a&#064gmx.ch> fix to buffer reset in AsymmetricBufferedBlockCipher.
Harendra Rawat <hsrawat&#064yahoo.com> fix for BERConstructedOctetString.
Rolf Lindemann <lindemann&#064trustcenter.de> patch for PKCS12 key store to support more flexible attribute specifications [#BMA-42].
Alex Artamonov <alexart.home&#064gmail.com> name look up patch for GOST-2001 parameters.
Mike Lyons <mlyons&#064layer7tech.com> work arounds for EC JDK bug 6738532 and JSSE EC naming conventions.
Chris Cole <chris_h_cole&#064yahoo.com> identified a problem handling null passwords when loading a BKS keystore.
Tomas Krivanek <tom&#064atack.cz> added checking of Sender header to SignedMailValidator.
Michael <emfau&#064t-online.de> correction of field error in getResponse method in CertRepMessage.
Trevor Perrin <trevor&#064cryptography.com> addition of constant time equals to avoid possible timing attacks.
Markus Kilås <markus&#064primekey.se> several enhancements to TimeStampResponseGenerator.
Dario Novakovic <darionis&#064yahoo.com> fix for NPE when checking revocation reason on CRL without extensions.
Michael Smith <msmith&#064cbnco.com> bug fixes and enhancements to the CMP and CRMF classes, initial Master List classes.
Andrea Zilio <andrea.zilio&#064gmail.com> fix for PEM password encryption of private keys.
Alex Birkett <alex&#064birkett.co.uk> added support for EC cipher suites in TLS client (RFC 4492) [#BJA-291].
Wayne Grant <waynedgrant&#064gmail.com> additional OIDs for PCKS10 and certificate generation support.
Frank Cornelis <info&#064frankcornelis.be> additional support classes for CAdES, enhancements to OCSP classes.
Jan Dittberner <jan&#064dittberner.info> addHeader patch for SMIME generator.
Bob McGowan <boab.mcgoo&#064btinternet.com> patch to support different object and mgf digests in PSS signing.
Ivo Matheis <i.matheis&#064seeburger.de> fix to padding verification in ISO-9796-1.
Marco Sandrini <nessche&#064gmail.com> patch to add IV to ISO9797Alg3Mac.
Alf Malf <alfilmalf&#064hotmail.com> removal of unnecessary limit in CMSContentInfoParser.
Alfonso Massa <alfonso.massa&#064insiel.it> contributions to CMS time stamp classes.
Giacomo Boccardo <gboccardo&#064unimaticaspa.it> initial work on CMSTimeStampedDataParser.
Arnis Tartu <arnis&#064ut.ee> patches for dealing with OIDs with specific key sizes associated in CMS.
Janusz Sikociski <J.Sikocinski&#064gdzie.pl> addition of Features subpacket support to OpenPGP API.
Juri Hudolejev <jhudolejev&#064gmail.com> JavaDoc fix to CMSSignedDataParser.
Liane Velten <liane.velten&#064hjp-consulting.com> fine tuning of code for DHParameters validation.
Shawn Willden <swillden&#064google.com> additional functionality to PGPKeyRing.
Atanas Krachev <akrachev&#064gmail.com> added support for revocation signatures in OpenPGP.
Mickael Laiking <mickael.laiking&#064keynectis.com> initial cut of EAC classes.
Tim Buktu <tbuktu&#064hotmail.com> Initial implementation of NTRU signing and encryption.
Bernd <rbernd&#064gmail.com> Fix for open of PGP literal data stream with UTF-8 naming.
Steing Inge Morisbak <stein.inge.morisbak&#064BEKK.no> Test code for lower case Hex data in PEM

headers.
Andreas Schmid <andreas.schmid&#064tngtech.com> Additional expiry time check in PGPPublicKeys.
Phil Steitz <phil.steitz&#064gmail.com> Final patch eliminating JCE dependencies in the OpenPGP BC classes.
Ignat Korchagin <ignat.korchagin&#064gmail.com> Initial implementation of DSTU-4145-2002, long hash fix for DSTU-4145-2002.
Petar Petrov <p.petrov&#064bers-soft.com> Testing and debugging of UTF-8 OpenPGP passwords.
Daniel Fitzpatrick <daniel.f.nwr&#064gmail.com> Initial implementation of ephemeral key support for IES, initial implementions of RSA-KEM and ECIES-KEM, initial implementation of homogeneous projective coordinates for EC.
Andy Neilson <Andy.Neilson&#064quest.com>a further patches to deal with multiple providers and PEMReader.
Ted Shaw <xiao.xj&#064gmail.com> patch to MiscPEMGenerator for handling new PKCS10CeriticationRequests.
Eleriseth <Eleriseth&#064WPECGLtYbVi8Rl6Y7Vzl2Lvd2EUVW99v3yNV3IWROG8.fms> speed up for SIC/CTR mode. Provider compatibilty generalisations for EC operations.
Kenny Root <kenny&#064the-b.org> patch for issuerAltName, subjectAltName support in X509CertificateObject, BaseBlockCipher.getIV() patch for AEAD.
Maarten Bodewes <maarten.bodewes&#064gmail.com> initial implementation of HKDF and NIST SP 800-108 MAC based KDF functions.
Philip Clay <pilf_b&#064gyahoo.com> Initial implementation of J-PAKE.
Brian Carlstrom <bdc&#064carlstrom.com> compliance patches for some JCA/JCE keystore and cipher classes, miscellaneous code quality improvements, intial provider PBKDF2WithHmacSHA1 SecretKeyFactory.
Samuel Lidén Borell <samuel&#064primekey.se> patch to add DSTU-4145 to DefaultSignatureAlgorithmFinder
Sergio Demian Lerner <sergiolerner&#064certimix.com> pointing out isInfinity issue in ECDSASigner signature verification.
Tim Whittington <Tim.Whittington&#064orionhealth.com> patch to remove extra init call in CMac, additional of Memoable interface for Digest classes, initial implementation of GMAC, further correctness tests for IV and reset processing in OCB, CCM, and block cipher reset. Initial implementation of Skein, XSalsa20, ChaCha, reduced round Salsa20, Threefish, and the Poly1305 MAC. Documentation updates. Added OCB support to Noekeon and CAST6 in the provider, exception testing for CTS, optimisations for CCM, provider support for AAD cipher methods, safe CipherInput/OutputStream implementations for use with AAD and subsequent bug fixes, cleanup after IDEA patent expiry, work on JCE SipHash support, optimisations for AESFastEngine, further work on EncodableDigest for SHA-2 digests, contributions to BCrypt/OpenBSDBCrypt, PGP API documentation and code quality work.
Marcus Lundblad <marcus.lundblad&#064primekey.se> patch for working arnound JDK jarsigner TSP bug, optional setting of IssuerSerial in TimeStampTokenGenerator, additional extensions enhancement for time stamp token generation.
Andrey Zhozhin <zhozhin&#064xrm.ru> patch for override of TSP SignerInfo attributes.
Sergey Tiunov <t5555d&#064gmail.com> initial cut of DVCS classes.
Damian Kolasa <fatfredyy&#064gmail.com> ASN1Sequence patch for class cast issue in X9Curve.
Ash Hughes <ashley.hughes&#064blueyonder.co.uk> patches for supporting PGPSecretKeyRing/PGPSecretKeys encodings with empty private keys, initial code for PGPSignatureSubpacketVector.getEmbeddedSignatures().
Daniel Hirscher <dev&#064daniel-hirscher.de> patch to support parsing of explicit EC parameters in PEM files.
Daniele Ricci <daniele.athome&#064gmail.com> initial implementation of EC keys for OpenpPGP and

RFC6637 support.
Matti Aarnio <matti.aarnio&#064methics.fi> tweaks to any build to remove dependence on shell scripts. Initial SM3 digest implementation, some EC related code cleanups, JavaDoc improvements for ASN.1 classes.
Babak Najafi <bnajafi&#064akamai.com> fixes to OpenPGP NotationData to prevent truncation problems.
Eric Müller <eric.mueller&#064sage.de> additional standard algorithm name lookups in JcaPEMKeyConverter.
Mathias Herberts <Mathias.Herberts&#064gmail.com> fix to inOff usage in RFC3394WrapEngine.
Daniil Ivanov <daniil.ivanov&#064gmail.com> addition of provider support for GOST HMAC SecretKeyFactory.
Daniele Grasso <daniele.grasso86&#064gmail.com> contributions to final Key calculation code for SRP6.
Andrey Utkin <cindrhc&#064gmail.com> patch to reconstruction of ECGOST keys from PrivateKeyInfo objects in provider classes.
Arnis Tartu <arnis&#064ut.ee> checker for generated key vs OID in JceCMSContentEncryptorBuilder.
AxelVDB <axel-vdb&#064riseup.net> initial implementation of Shacal2.
Roberto Tyley <> further work on completing gradle build.
Waldemar Dick <wdick&#064devmue.de> code improvement in x500 ASN.1 package.
Sid Steward <sid.steward&#064pdflabs.com> code improvements to ASN1Boolean.
Alex Klyubin <klyubin&#064google.com> AlgorithmParameters check for EC key agreement.
Jonathan Gillett <gsoc.student&#064gmail.com> Initial support for block cipher IVs in IESEngine, IES MAC length check bug fix.
Andreas Reiter <andreas.reiter&#064iaik.tugraz.at> Reported incomplete status of CertificateVerify processing in (D)TLS server, and provided fix.
Kieran Miller <kieran.miller&#064gmail.com> initial implementation for RFC 5649 key wrap with padding.
Oliver Ehli<ehli&#064arago.de> Additional support for BSI plain ECDSA in the provider.
Daniel Heldt<Daniel.Heldt&#064cryptovision.com> Initial support for encodable state message digests
Robert Bushman <bouncycastle&#064traxel.com> Clean up of DirectKeySignature example.
Maurice Aarts<aarts&#064riscure.com> updated to KDF generator to follow NIST SP 800-108.
Franziskus Kiefer<https://github.com/franziskuskiefer> initial implementation of Cramer-Shoup.
KB Sriram<mail_kb&#064yahoo.com> testing for odd encodings for PGP User Attribute Subpackets.
Marco Schulze<marco&#064nightlabs.de> Reported verification bug in GenericSigner.
Martin Schaef<https://github.com/martinschaef> contributed a code-cleanup patch.
dstutz<https://github.com/dstutz> added iteration count setters to PKCS#12 PBE mac/key generator builders.
Tobias Wich<tobias.wich&#064ecsec.de> Provided patch for TLS to work around servers sending Supported Elliptic Curves extension unexpectedly.
Hauke Mehrtens<hauke&#064hauke-m.de> TLS patch to add ECDHE_ECDSA CCM ciphersuites from RFC 7251.
Daniel Zimmerman<dmz&#064galois.com> Further key quality improvements to RSAKeyPairGenerator.
Jens Kapitza<j.kapitza&#064schwarze-allianz.de> Iterable support in OpenPGP API, code cleanup in OpenPGP API.
Johan Eklund<johan&#064primekey.se> update to RFC 6960 for OCSPObjectIdentifiers.
nikosn<https://github.com/nikosn> Fix to encoding of EC private keys to ensure encoding matches order length.
Axel von dem Bruch <axel-vdb&#064riseup.net> Contributions to BCrypt/OpenBSDBCrypt, original version of Blake2bDigest.
Derek Atkins <derek&#064ihtfp.com> Documentation fixes to X9ObjectIdentifiers.
Peter Jr Halicky <peto&#064halicky.sk> Correction to notification/error message handling in

SignedMailValidator.
lartiguePierre<https://github.com/lartiguePierre> Fix for counter signature SID in CMSSignedData.
Thomas Belot<thomas.belot+BC&#064gmail.com> initial CertPathLoopTest for demonstrating stack overflow issue.
Rich DiCroce<https://github.com/rdicroce> Initial implementation of server-side TLS-SRP support. TLS API extension to support non-blocking usage.
Björn Kautler<https://github.com/Vampire> Refinements to cert path validation (authority key addition, certificate order preservation).
Dominik Schürmann<https://github.com/dschuermann> method for returning signatures/verifications without user IDs on PGPPublicKey, method for exposing S2K in PGPSecretKey, constants for GNU protection modes in S2K classes, optional version header for armored output.
Michael <MSKnete&#064web.de> initial fix for bitStrength issue for OpenPGP EC keys.
Tobias Wagner <tobias.wagner&#064n-design.de> Fix SecureRandom handling in BcAsymmetricKeyWrapper [#BJA-536].
Sergio Giro <sgiro&#064google.com> Fixed adding of additional stores from CRL distribution point [#BJA-537]. Fixed missing null check for CRL certificate issuer [#BJA-538], removal of risky zeroisation code in PBE.java, check for salt in PBEKeys that require it.
bschuette<https://github.com/bschuette> Fixed typo in DefaultSignatureAlgorithmIdentifierFinder, additional methods on CMSSignedDataParser.
Leonard Dallot<https://github.com/dallotTazTag> Fix to S2K usage of none on changing passwords on keys without passwords originally.
Jan Willem Janssen <j.w.janssen+bouncycastle&#064lxtreme.nl> Support for DSAParameters in lightweight SubjectPublicKeyInfoFactory, initial object signer verifier for BC lightweight EC.
Sebastian Oerding <sebastian.oerding@robotron.de> Fixes to toString() in x509.CertificatePolicies.
Kai Kramer <kai.kramer&#064gmail.com> Code to deal with orphaned chain certificates in the PKCS#12 KeyStore.
Benoit Charles <benoit.charles&#064opentrust.com> Fix for IES data length check on decryption.
Niko <nfink95&#064gmail.com> fix to cast issue in getOutputSize() for ECIES.
akwizgran<https://github.com/akwizgran> Fixed clone of key in Blake2bDgest copy constructor, blake2b reset issue for varient keys.
Matthias Edelhoff <Matthias.Edelhoff&#064cryptovision.com> BasicConstraintsValidation pathlen fix in PKIX certpath classes.
Lukasz Deputat <lukasz.deputat&#064gmail.com> Fixed bugs in TlsUtils read methods [#BJA-592].
Justin Ludwig <https://github.com/justinludwig> Iterator fix for PGPObjectFactory to handle stream packets at start of iterated data.
André Berenguel <https://github.com/aberenguel> Fix to include ECNamedCurveSpec in EC AlgorithmParameterSpi
Slawomir Jaranowski<https://github.com/slawekjaranowski> Patch to make cipher/hash/signature name methods in PGP internal API public.
Andrey Vasilyev<https://github.com/andrey-vasilyev> Initial implementation of GOST R 34.11-2012.
William Glanton <wglanton77&#064gmail.com> Fixed bug in Poly1305 [#BJA-620].
jdvorak001<https://github.com/jdvorak001> Speed improvements for ASN.1 ObjectIdentifier cache.
Joseph Naegele <jnaegele&#064grierforensics.com> Patch for handling multiple certificates in a DANE SMIMEA entry.
Andrew Bonventre<https://github.com/andybons> NullPointer patch for WNafUtil.
The Google Security Team (Project Wycheproof) <https://github.com/google/wycheproof> defect analysis and additional test cases for the provider.
Gorka Irazoqui <girazoki&#064wpi.edu> from Intel Security Center of Excellence <https://security-

center.intel.com/> detection of the issue with AESFastEngine (CVE-2016-1000339), additional suggestions for improvement to hardening of AESEngine and finding cache sensitivities in EC key generation/signing.
Joerg Senekowitsch <joerg.senekowitsch&#064veridos.com> patch to deal with hard coded boolean in EAC ECDSAPublicKey.
Alexandr Krivoshta <wipe&#064ya.ru> N4 calculation fix to GOFB mode.
Artem Storozhuk <storojs72&#064gmail.com> N4 calculation fix to GOFB mode.
Na Yu <na.yu&#064samsung.com> Constructor patches to CMC PKIData.
Evangelos Karatsiolis <ekaratsiolis&#064mtg.de> Corrected use of explicit tagging in X.509 PolicyConstraints class.
VivleSoren <https://github.com/VivleSoren> additional constructor for McElieceCCA2PrivateKeyParameters.
mtausig <https://github.com/mtausig> JavaDoc fix for MCSEncryptedDataGenerator.
Anders Schack-Mulligen <https://github.com/aschackmull> code cleanups for CMSSignedDataParser, BrokenKDF2BytesGenerator.
Sebastian Wolfgang Roland <sebastianwolfgang.roland&#064stud.tu-darmstadt.de> Initial XMSS/XMSS-MT implementation.
didisoft <https://github.com/didisoft> test code for PGP signature removal involving user ids.
Mike Safonov<https://github.com/MikeSafonov> initial implementation of GOST3410-2012 for light weight provider and JCA, parameters patches for ECGOST keys, initial implementation of GOST3412-2015.
Artem Storozhuk <storojs72&#064gmail.com> initial implementation of DSTU7564 (digest) and DSTU7624 (cipher) and their associated modes.
Andreas Glaser <andreas.glaser&#064gi-de.com> patch to recognise ANSSI curves for PKCS#10 requests.
codeborne <https://github.com/cbxp> patch to correct OIDs used in public key digest parameters for ECGOST-2012.
FauxFaux <https://github.com/FauxFaux> patch for JDK 1.9 update to DRBG.java.
4garbage <https://github.com/4garbage> patch to allow GOST3410-94 private keys encoded as integers.
ekszz <https://github.com/ekszz> corrections to SM2 signer to include default identity value.
jminer <https://github.com/jminer> fix to Blake2b for hashes in range of 2**64-127 to 2**64.
str4d <https://github.com/str4d> initial implementation of Blake2s
Scott Woodward <scott&#064bit3consulting.com> performance fixes for CTRSP800DRBG.
David Strawn <https://github.com/isomarcte> fix for off by one error in SCRYPT bounds checking.
chris mccown <0xchrismccown&#064gmail.com> identification of serialisation issue with XMSS/XMSSMT private keys (see also CVE-2018-1000613).
ZZMarquis <https://github.com/ZZMarquis> offset patch for SM2 decrypt.
Andreas Kretschmer <https://github.com/Akretsch> NPE fix for CertTemplate.getVersion()
Armin Lunkeit, Michael Tautenhahn <> identification of M-R test issue on higher certainty values in RSA key pair generation.
Vincent Breitmoser <https://github.com/Valodim> fix to ignore unnecessary checksum calculator on PGP secret key encryption.
Adam Vartanian <https://github.com/flooey> use of ShortBuffer exception and buffer size pre-check in Cipher.doFinal().
Bernd <https://github.com/ecki> Fix to make PGPUtil.pipeFileContents use buffer and not leak file handle.
Shartung <https://github.com/shartung> Additional EC Key Agreement algorithms in support of German BSI TR-03111.
Paul Schaub <https://github.com/vanitasvitae> bringing PGPSecretKey.getUserIds() into line with PGPPublicKey.getUserIds(). Exception message fix in BcPublicKeyDataDecryptorFactory. Additional tests on PGP key ring generation.
Nick of Nexxar <https://github.com/nros> update to OpenPGP package to handle a broader range of EC

curves.

catbref <https://github.com/catbref> sample implementation of RFC 7748/Ed25519 (incorporated work from github users Valodim and str4d as well).

gerlion <https://github.com/gerlion> detection of concurrency issue with pre-1.60 EC math library.

fgrieu <fgrieu@gmail.com> identification and suggested fixes for possible timing vulnerability in OAEPEncoding and RSACoreEngine.

MTG <https://github.com/mtgag> patch for decoding issues in PKIPublicationInfo and CertifiedKeyPair.

</object>

</html>

1.3 commons-codec 1.9

1.3.1 Available under license :

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.
Apache Commons Codec
Copyright 2002-2013 The Apache Software Foundation

This product includes software developed at
The Apache Software Foundation (http://www.apache.org/).

src/test/org/apache/commons/codec/language/DoubleMetaphoneTest.java
contains test data from http://aspell.net/test/orig/batch0.tab.
Copyright (C) 2002 Kevin Atkinson (kevina@gnu.org)

1.4 dslink 0.18.3

1.4.1 Available under license :

package org.dsa.iot.dslink.node;

/**
* Handles various permission levels
* @author Samuel Grenier
*/
public enum Permission {
  NONE("none"),
  READ("read"),

```
WRITE("write"),
CONFIG("config"),
NEVER("never");

private final String jsonName;

Permission(String jsonName) {
    this.jsonName = jsonName;
}

/**
 * @return JSON ready name of the permission
 */
public String getJsonName() {
    return jsonName;
}

/**
 * Converts a string permission received from an endpoint back into a
 * permission enumeration.
 *
 * @param perm Permission string to convert.
 * @return Converted string into an enumeration.
 */
public static Permission toEnum(String perm) {
    switch (perm) {
        case "none":
            return NONE;
        case "read":
            return READ;
        case "write":
            return WRITE;
        case "config":
            return CONFIG;
        case "never":
            return NEVER;
        default:
            throw new RuntimeException("Unhandled type");
    }
}
}
```

1.5 DSLink Logging 0.18.3

1.6 DSLink Shared Runtime 0.18.3

1.7 netty-all 4.1.28.Final
1.7.1 Available under license :

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, 5th 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!
The person or persons who have associated work with this document (the
"Dedicator" or "Certifier") hereby either (a) certifies that, to the best of
his knowledge, the work of authorship identified is in the public domain of
the country from which the work is published, or (b) hereby dedicates whatever
copyright the dedicators holds in the work of authorship identified below (the
"Work") to the public domain. A certifier, moreover, dedicates any copyright
interest he may have in the associated work, and for these purposes, is
described as a "dedicator" below.

A certifier has taken reasonable steps to verify the copyright status of this
work. Certifier recognizes that his good faith efforts may not shield him from
liability if in fact the work certified is not in the public domain.

Dedicator makes this dedication for the benefit of the public at large and to

the detriment of the Dedicator's heirs and successors. Dedicator intends this
dedication to be an overt act of relinquishment in perpetuity of all present
and future rights under copyright law, whether vested or contingent, in the
Work. Dedicator understands that such relinquishment of all rights includes
the relinquishment of all rights to enforce (by lawsuit or otherwise) those
copyrights in the Work.

Dedicator recognizes that, once placed in the public domain, the Work may be
freely reproduced, distributed, transmitted, used, modified, built upon, or
otherwise exploited by anyone for any purpose, commercial or non-commercial,
and in any way, including by methods that have not yet been invented or
conceived.

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.

<div align="center">

Apache License

Version 2.0, January 2004

http://www.apache.org/licenses/

</div>

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.
Copyright 2009-2010 Ning, Inc.

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.
Copyright (c) 2010-2011 Matthew J. Francis and Contributors of the jbzip2 Project

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.
Protocol Buffers - Google's data interchange format
Copyright 2013 Google Inc. All rights reserved.
https://developers.google.com/protocol-buffers/

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 Google Inc. 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.

Code generated by the Protocol Buffer compiler is owned by the owner
of the input file used when generating it. This code is not
standalone and requires a support library to be linked with it. This
support library is itself covered by the above license.

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
The MIT License (MIT)

Copyright (c) 2000 - 2013 The Legion of the Bouncy Castle Inc.
              (http://www.bouncycastle.org)

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.
This copy of Aalto XML processor is licensed under the
Apache (Software) License, version 2.0 ("the License").
See the License for details about distribution rights, and the
specific rights regarding derivate works.

You may obtain a copy of the License at:

http://www.apache.org/licenses/

A copy is also included with both the the downloadable source code package
and jar that contains class bytecodes, as file "ASL 2.0". In both cases,
that file should be located next to this file: in source distribution
the location should be "release-notes/asl"; and in jar "META-INF/"
(BSD License: http://www.opensource.org/licenses/bsd-license)

Copyright (c) 2011, Joe Walnes, Aslak Hellesy and 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 Webbit 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.
Copyright 2011, Google Inc.
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 Google Inc. 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.
The MIT License

Copyright (c) 2009 William Kinney

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 (c) 2003-2008 Yuta Mori All Rights Reserved.

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.

The person or persons who have associated work with this document (the "Dedicator" or "Certifier") hereby either (a) certifies that, to the best of his knowledge, the work of authorship identified is in the public domain of the country from which the work is published, or (b) hereby dedicates whatever copyright the dedicators holds in the work of authorship identified below (the "Work") to the public domain. A certifier, moreover, dedicates any copyright interest he may have in the associated work, and for these purposes, is described as a "dedicator" below.

A certifier has taken reasonable steps to verify the copyright status of this work. Certifier recognizes that his good faith efforts may not shield him from liability if in fact the work certified is not in the public domain.

Dedicator makes this dedication for the benefit of the public at large and to the detriment of the Dedicator's heirs and successors. Dedicator intends this dedication to be an overt act of relinquishment in perpetuate of all present and future rights under copyright law, whether vested or contingent, in the Work. Dedicator understands that such relinquishment of all rights includes the relinquishment of all rights to enforce (by lawsuit or otherwise) those copyrights in the Work.

Dedicator recognizes that, once placed in the public domain, the Work may be freely reproduced, distributed, transmitted, used, modified, built upon, or otherwise exploited by anyone for any purpose, commercial or non-commercial, and in any way, including by methods that have not yet been invented or conceived.
Apache Harmony

Copyright 2006, 2010 The Apache Software Foundation.

This product includes software developed at
The Apache Software Foundation (http://www.apache.org/).
Copyright (c) 2000,2001,2002,2003,2004 ymnk, JCraft,Inc. 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. The names of the authors 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 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 JCRAFT,
INC. OR ANY CONTRIBUTORS TO THIS SOFTWARE 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 Netty Project
                    =================

Please visit the Netty web site for more information:

 * http://netty.io/

Copyright 2014 The Netty Project

The Netty Project licenses this file to you 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.

Also, please refer to each LICENSE.<component>.txt file, which is located in
the 'license' directory of the distribution file, for the license terms of the
components that this product depends on.

This product contains the extensions to Java Collections Framework which has
been derived from the works by JSR-166 EG, Doug Lea, and Jason T. Greene:

* LICENSE:
   * license/LICENSE.jsr166y.txt (Public Domain)
 * HOMEPAGE:
   * http://gee.cs.oswego.edu/cgi-bin/viewcvs.cgi/jsr166/
   * http://viewvc.jboss.org/cgi-bin/viewvc.cgi/jbosscache/experimental/jsr166/

This product contains a modified version of Robert Harder's Public Domain
Base64 Encoder and Decoder, which can be obtained at:

 * LICENSE:
   * license/LICENSE.base64.txt (Public Domain)
 * HOMEPAGE:
   * http://iharder.sourceforge.net/current/java/base64/

This product contains a modified portion of 'Webbit', an event based
WebSocket and HTTP server, which can be obtained at:

 * LICENSE:
   * license/LICENSE.webbit.txt (BSD License)
 * HOMEPAGE:
   * https://github.com/joewalnes/webbit

This product contains a modified portion of 'SLF4J', a simple logging
facade for Java, which can be obtained at:

 * LICENSE:
   * license/LICENSE.slf4j.txt (MIT License)
 * HOMEPAGE:
   * http://www.slf4j.org/

This product contains a modified portion of 'Apache Harmony', an open source
Java SE, which can be obtained at:

 * NOTICE:
   * license/NOTICE.harmony.txt
 * LICENSE:
   * license/LICENSE.harmony.txt (Apache License 2.0)
 * HOMEPAGE:
   * http://archive.apache.org/dist/harmony/

This product contains a modified portion of 'jbzip2', a Java bzip2 compression
and decompression library written by Matthew J. Francis. It can be obtained at:

 * LICENSE:
   * license/LICENSE.jbzip2.txt (MIT License)
 * HOMEPAGE:
   * https://code.google.com/p/jbzip2/

This product contains a modified portion of 'libdivsufsort', a C API library to construct
the suffix array and the Burrows-Wheeler transformed string for any input string of
a constant-size alphabet written by Yuta Mori. It can be obtained at:

 * LICENSE:
   * license/LICENSE.libdivsufsort.txt (MIT License)
 * HOMEPAGE:
   * https://github.com/y-256/libdivsufsort

This product contains a modified portion of Nitsan Wakart's 'JCTools', Java Concurrency Tools for the JVM,
which can be obtained at:

 * LICENSE:
   * license/LICENSE.jctools.txt (ASL2 License)
 * HOMEPAGE:
   * https://github.com/JCTools/JCTools

This product optionally depends on 'JZlib', a re-implementation of zlib in
pure Java, which can be obtained at:

 * LICENSE:
   * license/LICENSE.jzlib.txt (BSD style License)
 * HOMEPAGE:
   * http://www.jcraft.com/jzlib/

This product optionally depends on 'Compress-LZF', a Java library for encoding and
decoding data in LZF format, written by Tatu Saloranta. It can be obtained at:

 * LICENSE:
   * license/LICENSE.compress-lzf.txt (Apache License 2.0)
 * HOMEPAGE:
   * https://github.com/ning/compress

This product optionally depends on 'lz4', a LZ4 Java compression
and decompression library written by Adrien Grand. It can be obtained at:

 * LICENSE:
   * license/LICENSE.lz4.txt (Apache License 2.0)
 * HOMEPAGE:
   * https://github.com/jpountz/lz4-java

This product optionally depends on 'lzma-java', a LZMA Java compression
and decompression library, which can be obtained at:

 * LICENSE:
   * license/LICENSE.lzma-java.txt (Apache License 2.0)
 * HOMEPAGE:
   * https://github.com/jponge/lzma-java

This product contains a modified portion of 'jfastlz', a Java port of FastLZ compression
and decompression library written by William Kinney. It can be obtained at:

  * LICENSE:
    * license/LICENSE.jfastlz.txt (MIT License)
  * HOMEPAGE:
    * https://code.google.com/p/jfastlz/

This product contains a modified portion of and optionally depends on 'Protocol Buffers', Google's data
interchange format, which can be obtained at:

  * LICENSE:
    * license/LICENSE.protobuf.txt (New BSD License)
  * HOMEPAGE:
    * https://github.com/google/protobuf

This product optionally depends on 'Bouncy Castle Crypto APIs' to generate
a temporary self-signed X.509 certificate when the JVM does not provide the
equivalent functionality. It can be obtained at:

  * LICENSE:
    * license/LICENSE.bouncycastle.txt (MIT License)
  * HOMEPAGE:
    * http://www.bouncycastle.org/

This product optionally depends on 'Snappy', a compression library produced
by Google Inc, which can be obtained at:

  * LICENSE:
    * license/LICENSE.snappy.txt (New BSD License)
  * HOMEPAGE:
    * https://github.com/google/snappy

This product optionally depends on 'JBoss Marshalling', an alternative Java
serialization API, which can be obtained at:

  * LICENSE:
    * license/LICENSE.jboss-marshalling.txt (GNU LGPL 2.1)
  * HOMEPAGE:
    * http://www.jboss.org/jbossmarshalling

This product optionally depends on 'Caliper', Google's micro-
benchmarking framework, which can be obtained at:

  * LICENSE:
    * license/LICENSE.caliper.txt (Apache License 2.0)
  * HOMEPAGE:

* https://github.com/google/caliper

This product optionally depends on 'Apache Commons Logging', a logging
framework, which can be obtained at:

 * LICENSE:
   * license/LICENSE.commons-logging.txt (Apache License 2.0)
 * HOMEPAGE:
   * http://commons.apache.org/logging/

This product optionally depends on 'Apache Log4J', a logging framework, which
can be obtained at:

 * LICENSE:
   * license/LICENSE.log4j.txt (Apache License 2.0)
 * HOMEPAGE:
   * http://logging.apache.org/log4j/

This product optionally depends on 'Aalto XML', an ultra-high performance
non-blocking XML processor, which can be obtained at:

 * LICENSE:
   * license/LICENSE.aalto-xml.txt (Apache License 2.0)
 * HOMEPAGE:
   * http://wiki.fasterxml.com/AaltoHome

This product contains a modified version of 'HPACK', a Java implementation of
the HTTP/2 HPACK algorithm written by Twitter. It can be obtained at:

 * LICENSE:
   * license/LICENSE.hpack.txt (Apache License 2.0)
 * HOMEPAGE:
   * https://github.com/twitter/hpack

This product contains a modified portion of 'Apache Commons Lang', a Java library
provides utilities for the java.lang API, which can be obtained at:

 * LICENSE:
   * license/LICENSE.commons-lang.txt (Apache License 2.0)
 * HOMEPAGE:
   * https://commons.apache.org/proper/commons-lang/

This product contains the Maven wrapper scripts from 'Maven Wrapper', that provides an easy way to ensure a user
has everything necessary to run the Maven build.

 * LICENSE:
   * license/LICENSE.mvn-wrapper.txt (Apache License 2.0)

* HOMEPAGE:

  * https://github.com/takari/maven-wrapper