Oracle® Communications Network Charging and Control

Licensing Information User Manual Release 12.0.0 E89908-01

December 2017



Copyright © 2000, 2017, Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.

Contents

Introduction	1
Licensing Information	2
Third-Party Notices	
Open Source or Other Separately Licensed Software	
Third-Party Licenses	9
Apache License, Version 2.0	9
Boost Software License	11
Douglas C. Schmidt License	11
International Components for Unicode License	12
Massachusetts Institute of Technology License	13
World Wide Web Consortium License	13

Introduction

This Licensing Information document is a part of the product or program documentation under the terms of your Oracle license agreement and is intended to help you understand the program editions, entitlements, restrictions, prerequisites, special license rights, and/or separately licensed third party technology terms associated with the Oracle software program(s) covered by this document (the "Program(s)"). Entitled or restricted use products or components identified in this document that are not provided with the particular Program may be obtained from the Oracle Software Delivery Cloud website (https://edelivery.oracle.com) or from media Oracle may provide. If you have a question about your license rights and obligations, please contact your Oracle sales representative, review the information provided in Oracle's Software Investment Guide (http://www.oracle.com/us/corporate/pricing/softwareinvestment-guide/index.html), and/or contact the applicable Oracle License Management Services representative listed on http://www.oracle.com/us/corporate/license-management-services/index.html.

Licensing Information

Product	Subproduct	Licensing Description
Oracle Communications Online Charging Controller	Oracle Communications Online Charging Controller – All Products	For any deployment of Oracle Communications Online Charging Controller, the customer first has to purchase one of the following core options: Oracle Communications Online Charging Controller for Mobile Services Oracle Communications Online Charging Controller for Internet of Things Both of the core options have the same pre-requisites. Each core option is restricted to particular services. Prerequisites: Oracle Communications Control Plan Editor Oracle Database Enterprise Edition, Oracle Database Standard Edition, Standard Edition One or Standard Edition 2 for the Service Logic Controllers and Voucher and Wallet Servers. Oracle Database Enterprise Edition for the Service Management System Oracle Database EE Option: Partitioning for the Service Management System Oracle Database EE Option: Real Application Clusters One Node if a Highly Available (HA) deployment of the Service Management System is required Oracle Database EE Option: Real Application Clusters if RAC clustering is required for the Service Management
Oracle Communications Online Charging Controller for Mobile Services	Oracle Communications Online Charging Controller for use for voice, messaging and data services, including online rating and charging, prepaid balance management and providing value-added services. Includes Text based self-care, allowing subscribers to submit self-care requests via SMS, USSD, SIP, or any other text based self-care channel. Use of Oracle Communications Network Connectivity Agents to control Voice based sessions, using protocols such as CAP, INAP, SIP, ISUP, IS-41 and IS-826 Use of Oracle Communications Network Connectivity Agents to control Text Message based sessions, using protocols such as MAP, CAP, SIP, IS-41, SMPP, UCP, and SMTP. Use of Oracle Communications Network Connectivity Agents to control Data sessions, using protocols such as DIAMETER, RADIUS, and CAP Allows use of Oracle Communications Network Connectivity Agents for SOAP based interactions, with Oracle Communications Network Charging and Control acting as either a client or a server. Prerequisites: See Oracle Communications Online Charging Controller – All Products.	

Product	Subproduct	Licensing Description
	Oracle Communications Online Charging Controller for Internet of Things	Oracle Communications Online Charging Controller for use for messaging and data services for connected devices. Includes online rating and charging, balance management and value-added services.
		Includes Text based device management, allowing devices to submit requests via SMS, USSD, SIP, or any other text based channel.
	or rimigo	Allows use of Oracle Communications Network Connectivity Agents to control Text Message based sessions, using protocols such as MAP, CAP, SIP, IS-41, SMPP, UCP, and SMTP.
		Includes use of Oracle Communications Network Connectivity Agents to control Data sessions, using protocols such as DIAMETER, RADIUS, and CAP
		Allows use of Oracle Communications Network Connectivity Agents for SOAP based interactions, with Oracle Communications Network Charging and Control acting as either a client or a server.
		Restrictions:
		Excludes use of Oracle Communications Online Charging Controller for control or charging of any voice services via any Network Connectivity Agent.
		Prerequisites:
		See Oracle Communications Online Charging Controller – All Products.
	Option: Oracle Communications	Management and redemption of vouchers, including definition and use of voucher types for voucher-less recharging.
	Recharge and Voucher	Prerequisites:
	Management	One of the following core options must be purchased in order to license Oracle Communications Recharge and Voucher Management:
		Oracle Communications Online Charging Controller for Mobile Services
		Oracle Communications Online Charging Controller for Internet of Things
		If Automatic Voucher Deletion functionality is to be used on the Service Management Server the following Database option is required:
		Oracle Database EE Option: Partitioning
		Also see Oracle Communications Online Charging Controller – All Products for core option requirements.
	Option: Oracle Communications Promotion Management	Definition and management of Promotions for subscribers provisioned on the Oracle Communications Network Charging and Control deployment. Includes event and tracker promotions with liability controls, subscriber base segmentation and targeting, black and white lists, and promotion notifications
		Prerequisites:
		One of the following core options must be purchased in order to license Oracle Communications Promotion Manager
		Oracle Communications Online Charging Controller for Mobile Services
		 Oracle Communications Online Charging Controller for Internet of Things
		Also see Oracle Communications Online Charging Controller – All Products for core option requirements.

Product	Subproduct	Licensing Description	
	Option: Oracle Communications Subscriber Self-Care	Includes Text based device management, allowing devices to submit requests via SMS, USSD, SIP, or any other text based channel.	
	Subscriber Self-Care	Prerequisites and Inclusions:	
		Also see Oracle Communications Online Charging Controller – All Products.	
		Note:	
		This functionality is included with Oracle Communications Online Charging Controller core options and does not need to be licensed separately when that product is licensed.	
Oracle Communications	Oracle Communications	IN-based messaging applications (e.g., prepaid messaging, First Delivery Attempt SMS, anti-spam).	
Messaging Manager	Messaging Manager – All Products	For any deployment of Oracle Communications Messaging Manager, the customer first has to purchase one of the following core options:	
		Oracle Communications Messaging Manager	
		Oracle Communications Express Delivery Routing	
		All the core options have the same inclusions and pre-requisites.	
		Prerequisites:	
		 Oracle Database Standard Edition, Standard Edition One or Standard Edition 2 for each Service Logic Controller deployed. 	
		Oracle Database Enterprise Edition for the Service Management System	
		Oracle Database EE Option: Partitioning for the Service Management System	
		Oracle Database EE Option: Real Application Clusters if RAC clustering is required for the Service Management System	
		Additionally, the following licenses must also be purchased:	
		Oracle Communications Control Plan Editor	
		Oracle Communications Messaging Control Agents	
	Oracle Communications Messaging Manager	Originating, Terminating and ASP messaging, Home Routing, Protocol Conversion, Anti-Fraud, Personal Message exchange, Prerequisites:	
		See Oracle Communications Messaging Manager – All Products	
	Oracle Communications Express Delivery	Delivery of SMS notifications to the subscriber's mobile device via the MSC, and allowing fall back to a SMSC for store and retry if the message cannot be delivered.	
	Routing	Prerequisites:	
		See Oracle Communications Messaging Manager – All Products.	
Oracle Communications	Oracle Communications	IN-based number routing applications (e.g., Number Portability, Least Cost Routing, VPN).	
Number Services Manager	Number Services Manager – All Products	For any deployment of Oracle Communications Number Services Manager, the customer first has to purchase one of the following core options:	
		Oracle Communications Advanced Control Services Gateway	
		Oracle Communications Number Portability for Charging	

Product	Subproduct	Licensing Description	
		All the core options have the same inclusions and pre-requisites. Each is restricted to particular services.	
		Prerequisites:	
		 Oracle Database Standard Edition, Standard Edition One or Standard Edition 2 for each Service Logic Controller deployed. 	
		Oracle Database Enterprise Edition for the Service Management System	
		Oracle Database EE Option: Partitioning for the Service Management System	
		Oracle Database EE Option: Real Application Clusters if RAC clustering is required for the Service Management System	
		Additionally, the following licenses must also be purchased:	
		Oracle Communications Control Plan Editor	
		Oracle Communications Voice Control Agents if Voice based services are to be offered	
		Oracle Communications Messaging Control Agents if Message based services are to be offered.	
	Oracle Communications Advanced Control	Terminating and originating number routing services, such as Freephone, Premium Line, Least Cost Routing and Virtual Private Network services.	
	Services Gateway	Prerequisites:	
		See Oracle Communications Number Services Manager – All Products	
	Oracle Communications	Number Portability services for fixed and mobile devices, including ENUM database and lookup.	
	Number Portability for	Prerequisites:	
	Charging	See Oracle Communications Number Services Manager – All Products	
Oracle Communications Control Plan	Oracle Communications Control Plan Editor	Graphical configuration of Session and Event service logic for all Oracle Communications Network Charging and Control based services.	
Editor	Control Plan Editor	Prerequisites:	
		One of the following core options must be purchased in order to license Oracle Communications Control Plan Editor:	
		Oracle Communications Online Charging Controller for Mobile Services	
		Oracle Communications Online Charging Controller for Internet of Things	
		Oracle Communications Messaging Manager	
		Oracle Communications Express Delivery Routing	
		Oracle Communications Advanced Control Services Gateway	
		Oracle Communications Number Portability for Charging	

Product	Subproduct	Licensing Description
Oracle	Oracle Communications Network Connectivity Agents – All Options	Prerequisites:
Communications Network		These agents can be purchased with any of the products of the following two applications:
Connectivity		Oracle Communications Messaging Manager
Agents		Oracle Communications Messaging Manager
		Oracle Communications Express Delivery Routing
		Oracle Communications Number Services Manager
		Oracle Communications Advanced Control Services Gateway
		Oracle Communications Number Portability for Charging
		Note:
		Oracle Communications Network Connectivity Agent licenses are included with the Oracle Communications Online Charging Controller core options as defined in the description of each core option. Oracle Communications Online Charging Controller for Internet of Thigs does not include Oracle Communications Voice Control Agents.
	Oracle Communications Voice Control Agents	Use of Oracle Communications Network Connectivity Agents to control Voice based sessions, using protocols such as CAP, INAP, SIP, ISUP, IS-41 and IS-826
	Control / tgomo	Prerequisites:
	Oracle Communications Messaging Control	See Oracle Communications Network Connectivity Agents – All Options
		Use of Oracle Communications Network Connectivity Agents to control Message based sessions, using protocols such as MAP, CAP, SIP, IS-41, SMPP, UCP, and SMTP.
	Agents	Prerequisites:
		See Oracle Communications Network Connectivity Agents – All Option
	Oracle Communications Data	Use of Oracle Communications Network Connectivity Agents to control Data sessions, using protocols such as DIAMETER, RADIUS, and CAP
	Control Agents	Prerequisites:
		See Oracle Communications Network Connectivity Agents – All Options
	Oracle Communications Open Service Development	Use of Oracle Communications Network Connectivity Agents for SOAP based interactions, with Oracle Communications Network Charging and Control acting as either a client or a server.
	201 VIOC DO VOIOPINOITE	Prerequisites:
		See Oracle Communications Network Connectivity Agents – All Options

Third-Party Notices

Open Source or Other Separately Licensed Software

Required notices for open source or other separately licensed software products or components distributed in Oracle Communications Network Charging and Control are identified in the following table along with the applicable licensing information. Additional notices and/or licenses may be found in the included documentation or readme files of the individual third party software.

Provider	Component(s)	Functionality	Licensing Information
The Apache Software Foundation	Apache License Version 2.0	License Detail. See below for use.	This product includes software developed by The Apache Software Foundation (http://www.apache.org/). The following applies to all products licensed under the Apache 2.0 License: You may not use the identified files except in compliance with the Apache License, Version 2.0 (the "License.") You may obtain a copy of the License at http://www.apache.org/licenses/LICENSE-2.0 . For a copy of the license, see Apache License , Version 2.0.
The Apache Software Foundation	log4j	Java logging	Apache License Version 2.0, January 2004 http://www.apache.org/licenses/ This product includes software developed by The Apache Software Foundation (http://www.apache.org/). For a copy of the license, see Apache License , Version 2.0.
The Apache Software Foundation	Xalan	Runtime XML WSDL parsing	Apache License Version 2.0, January 2004 http://www.apache.org/licenses/ This product includes software developed by The Apache Software Foundation (http://www.apache.org/). For a copy of the license, see Apache License, Version 2.0. Portions of this software was originally based on the following: Software Copyright © 1999, IBM Corporation., http://www.ibm.com.
The Apache Software Foundation	Xerces	Runtime XML WSDL parsing	Apache License Version 2.0, January 2004 http://www.apache.org/licenses/ This product includes software developed by The Apache Software Foundation (http://www.apache.org/). For a copy of the license, see Apache License , Version 2.0. Portions of this software were originally based on the following: Software Copyright © 1999, IBM Corporation., http://www.ibm.com .
Boost Software	Boost C++ Libraries	Runtime parsing libraries	Boost Software License - Version 1.0 - August 17th, 2003 For a copy of the license, see Boost Software License.

Provider	Component(s)	Functionality	Licensing Information
Douglas C. Schmidt	ACE, TAO	IOR utility libraries	ACE(TM), TAO(TM), CIAO(TM), DAnCE>(TM), and CoSMIC(TM) (henceforth referred to as "DOC software") are copyrighted by Douglas C. Schmidt and his research group at Washington University, University of California, Irvine, and Vanderbilt University, Copyright (c) 1993-2016, all rights reserved. For a copy of the license, see Douglas C. Schmidt License.
Unicode, Inc	ICU	Runtime unicode	Copyright © 1991-2017 Unicode, Inc. All rights reserved.
Officode, fric		and globalization libraries	For a copy of the license, see International Components for Unicode License.
Massachusetts	C-ARES	Runtime DNS	Copyright © 1998 Massachusetts Institute of Technology.
Institute of Technology		resolution	For a copy of the license, see <u>Massachusetts Institute of Technology License</u> .
World Wide Web Consortium	Soap_encoding .xml	GUI XML WSDL parsing	Copyright © 1994-2002 World Wide Web Consortium, (Massachusetts Institute of Technology, Institut National de Recherche en Informatique et en Automatique, Keio University). All Rights Reserved.
			http://www.w3.org/Consortium/Legal/
			For a copy of the license, see World Wide Web Consortium License.

Third-Party Licenses

Apache License, Version 2.0

The following applies to all products licensed under the Apache 2.0 License:

You may not use the identified files except in compliance with the Apache License, Version 2.0 (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 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;
 - b. You must cause any modified files to carry prominent notices stating that You changed the files; and
 - 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
 - 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

Boost Software License

Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization obtaining a copy of the software and accompanying documentation covered by this license (the "Software") to use, reproduce, display, distribute, execute, and transmit the Software, and to prepare derivative works of the Software, and to permit third-parties to whom the Software is furnished to do so, all subject to the following:

The copyright notices in the Software and this entire statement, including the above license grant, this restriction and the following disclaimer, must be included in all copies of the Software, in whole or in part, and all derivative works of the Software, unless such copies or derivative works are solely in the form of machine-executable object code generated by a source language processor.

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, TITLE AND NON-INFRINGEMENT. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Douglas C. Schmidt License

ACE(TM), TAO(TM), CIAO(TM), DAnCE>(TM), and CoSMIC(TM) (henceforth referred to as "DOC software") are copyrighted by Douglas C. Schmidt and his research group at Washington University, University of California, Irvine, and Vanderbilt University, Copyright (c) 1993-2016, all rights reserved. Since DOC software is open-source, freely available software, you are free to use, modify, copy, and distribute—perpetually and irrevocably—the DOC software source code and object code produced from the source, as well as copy and distribute modified versions of this software. You must, however, include this copyright statement along with any code built using DOC software that you release. No copyright statement needs to be provided if you just ship binary executables of your software products.

You can use DOC software in commercial and/or binary software releases and are under no obligation to redistribute any of your source code that is built using DOC software. Note, however, that you may not misappropriate the DOC software code, such as copyrighting it yourself or claiming authorship of the DOC software code, in a way that will prevent DOC software from being distributed freely using an opensource development model. You needn't inform anyone that you're using DOC software in your software, though we encourage you to let us know so we can promote your project in the DOC software success stories.

The ACE, TAO, CIAO, DAnCE, and CoSMIC web sites are maintained by the DOC Group at the Institute for Software Integrated Systems (ISIS) and the Center for Distributed Object Computing of Washington University, St. Louis for the development of open-source software as part of the open-source software community. Submissions are provided by the submitter "as is" with no warranties whatsoever, including any warranty of merchantability, noninfringement of third party intellectual property, or fitness for any particular purpose. In no event shall the submitter be liable for any direct, indirect, special, exemplary, punitive, or consequential damages, including without limitation, lost profits, even if advised of the possibility of such damages. Likewise, DOC software is provided as is with no warranties of any kind, including the warranties of design, merchantability, and fitness for a particular purpose, noninfringement, or arising from a course of dealing, usage or trade practice. Washington University, UC Irvine, Vanderbilt University, their employees, and students shall have no liability with respect to the infringement of copyrights, trade secrets or any patents by DOC software or any part thereof. Moreover, in no event will Washington University, UC Irvine, or Vanderbilt University, their employees, or students be liable for any lost revenue or profits or other special, indirect and consequential damages.

DOC software is provided with no support and without any obligation on the part of Washington University, UC Irvine, Vanderbilt University, their employees, or students to assist in its use, correction, modification, or enhancement. A number of companies around the world provide commercial support for DOC software, however. DOC software is Y2K-compliant, as long as the underlying OS platform is Y2Kcompliant. Likewise, DOC software is compliant with the new US daylight savings rule passed by Congress as "The Energy Policy Act of 2005," which established new daylight savings times (DST) rules for the United States that expand DST as of March 2007. Since DOC software obtains time/date and calendaring information from operating systems users will not be affected by the new DST rules as long as they upgrade their operating systems accordingly.

The names ACE(TM), TAO(TM), CIAO(TM), DAnCE(TM), CoSMIC(TM), Washington University, UC Irvine, and Vanderbilt University, may not be used to endorse or promote products or services derived from this source without express written permission from Washington University, UC Irvine, or Vanderbilt University. This license grants no permission to call products or services derived from this source ACE(TM), TAO(TM), CIAO(TM), DAnCE(TM), or CoSMIC(TM), nor does it grant permission for the name Washington University, UC Irvine, or Vanderbilt University to appear in their names.

International Components for Unicode License

COPYRIGHT AND PERMISSION NOTICE (ICU 58 and later)

Copyright © 1991-2017 Unicode, Inc. All rights reserved.

Distributed under the Terms of Use in http://www.unicode.org/copyright.html

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that either

- (a) this copyright and permission notice appear with all copies of the Data Files or Software, or
- (b) this copyright and permission notice appear in associated Documentation.

THE DATA FILES AND SOFTWARE ARE 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 OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

Massachusetts Institute of Technology License

Copyright © 1998 Massachusetts Institute of Technology.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of M.I.T. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

M.I.T. makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

World Wide Web Consortium License

Copyright © 1994-2002 World Wide Web Consortium, (Massachusetts Institute of Technology, Institut National de Recherche en Informatique et en Automatique, Keio University). All Rights Reserved.

http://www.w3.org/Consortium/Legal/

THIS SOFTWARE AND DOCUMENTATION IS PROVIDED "AS IS" AND COPYRIGHT HOLDERS MAKE NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE OR DOCUMENTATION WILL NOT INFRINGE ANY THIRD PARTY PATENTS, COPYRIGHTS, TRADEMARKS OR OTHER RIGHTS. COPYRIGHT HOLDERS WILL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF ANY USE OF THE SOFTWARE OR DOCUMENTATION.