IioT

Anybus® X-gateway™ Network Interface

USER MANUAL

SCM-1202-109 1.0 en-US ENGLISH
Important User Information

Liability

Every care has been taken in the preparation of this document. Please inform HMS Industrial Networks AB of any inaccuracies or omissions. The data and illustrations found in this document are not binding. We, HMS Industrial Networks AB, reserve the right to modify our products in line with our policy of continuous product development. The information in this document is subject to change without notice and should not be considered as a commitment by HMS Industrial Networks AB. HMS Industrial Networks AB assumes no responsibility for any errors that may appear in this document.

There are many applications of this product. Those responsible for the use of this device must ensure that all the necessary steps have been taken to verify that the applications meet all performance and safety requirements including any applicable laws, regulations, codes, and standards.

HMS Industrial Networks AB will under no circumstances assume liability or responsibility for any problems that may arise as a result from the use of undocumented features, timing, or functional side effects found outside the documented scope of this product. The effects caused by any direct or indirect use of such aspects of the product are undefined, and may include e.g. compatibility issues and stability issues.

The examples and illustrations in this document are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular implementation, HMS Industrial Networks AB cannot assume responsibility for actual use based on these examples and illustrations.

Intellectual Property Rights

HMS Industrial Networks AB has intellectual property rights relating to technology embodied in the product described in this document. These intellectual property rights may include patents and pending patent applications in the USA and other countries.

Anybus® is a registered trademark of HMS Industrial Networks AB. All other trademarks mentioned in this document are the property of their respective holders.
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Preface</td>
<td>3</td>
</tr>
<tr>
<td>1.1 About This Document</td>
<td>3</td>
</tr>
<tr>
<td>1.2 Document history</td>
<td>3</td>
</tr>
<tr>
<td>1.3 Document Conventions</td>
<td>4</td>
</tr>
<tr>
<td>2 Description</td>
<td>5</td>
</tr>
<tr>
<td>2.1 Overview</td>
<td>5</td>
</tr>
<tr>
<td>2.2 Connectors</td>
<td>5</td>
</tr>
<tr>
<td>2.3 LED Indicators</td>
<td>6</td>
</tr>
<tr>
<td>3 Installation</td>
<td>7</td>
</tr>
<tr>
<td>3.1 Installation Overview</td>
<td>7</td>
</tr>
<tr>
<td>4 Configuration</td>
<td>8</td>
</tr>
<tr>
<td>4.1 TCP/IP Configuration</td>
<td>8</td>
</tr>
<tr>
<td>4.2 Anybus Configuration Manager - X-gateway</td>
<td>11</td>
</tr>
<tr>
<td>4.3 Anybus Configuration Manager - IIoT</td>
<td>12</td>
</tr>
<tr>
<td>4.4 Web Interface</td>
<td>14</td>
</tr>
<tr>
<td>5 Technical Data</td>
<td>16</td>
</tr>
<tr>
<td>A License Information</td>
<td>17</td>
</tr>
</tbody>
</table>
Preface

1 Preface

1.1 About This Document

This document describes how to configure and use the Anybus X-gateway IIoT Interface.

The use of this product requires a basic knowledge of industrial network technology and of the MQTT and OPC UA protocols.

For additional documentation and software downloads, FAQs, troubleshooting guides and technical support, please visit www.anybus.com/support.

1.2 Document history

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>2018-10-29</td>
<td>First release</td>
</tr>
</tbody>
</table>
1.3 Document Conventions

Ordered lists are used for instructions that must be carried out in sequence:

1. First do this
2. Then do this

Unordered (bulleted) lists are used for:

- Itemized information
- Instructions that can be carried out in any order

...and for action-result type instructions:

► This action...

leads to this result

Bold typeface indicates interactive parts such as connectors and switches on the hardware, or menus and buttons in a graphical user interface.

Monospaced text is used to indicate program code and other kinds of data input/output such as configuration scripts.

This is a cross-reference within this document: Document Conventions, p. 4

This is an external link (URL): www.hms-networks.com

---

This instruction must be followed to avoid a risk of reduced functionality and/or damage to the equipment, or to avoid a network security risk.

Caution
This instruction must be followed to avoid a risk of personal injury.

WARNING
This instruction must be followed to avoid a risk of death or serious injury.
2 Description

2.1 Overview

The Anybus X-gateway IIoT Interface allows you to seamlessly interconnect a PLC and its connected devices to IIoT networks using MQTT and OPC UA.

2.2 Connectors

This product contains parts that can be damaged by electrostatic discharge (ESD). Use ESD prevention measures to avoid damage.

Fig. 1 IIoT interface

Ethernet Connectors

The IIoT interface contains a dual port Ethernet switch with RJ45 type connectors. The two Ethernet ports are labeled X1.1 and X1.2 if the interface is top-mounted, and X2.1 and X2.2 if the interface is bottom-mounted.

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TD+</td>
<td>Transmit data +</td>
</tr>
<tr>
<td>2</td>
<td>TD-</td>
<td>Transmit data -</td>
</tr>
<tr>
<td>3</td>
<td>RD+</td>
<td>Receive data +</td>
</tr>
<tr>
<td>4</td>
<td>-</td>
<td>(reserved)</td>
</tr>
<tr>
<td>5</td>
<td>-</td>
<td>(reserved)</td>
</tr>
<tr>
<td>6</td>
<td>RD-</td>
<td>Receive data -</td>
</tr>
<tr>
<td>7</td>
<td>-</td>
<td>(reserved)</td>
</tr>
<tr>
<td>8</td>
<td>-</td>
<td>(reserved)</td>
</tr>
</tbody>
</table>
2.3 LED Indicators

The **GW Status** LED indicates operation status for the X-gateway. The other LEDs indicate network communication and status for the IIoT interface.

<table>
<thead>
<tr>
<th>LED</th>
<th>Indication</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>GW Status</td>
<td>Off</td>
<td>No power</td>
</tr>
<tr>
<td></td>
<td>Green</td>
<td>Gateway running</td>
</tr>
<tr>
<td></td>
<td>Red</td>
<td>Communication error</td>
</tr>
<tr>
<td></td>
<td>Red, flashing</td>
<td>Network interface error</td>
</tr>
<tr>
<td>LINK/ACT</td>
<td>Off</td>
<td>Link not detected or no power</td>
</tr>
<tr>
<td></td>
<td>Green</td>
<td>Link established (100 Mbit/s)</td>
</tr>
<tr>
<td></td>
<td>Green, flickering</td>
<td>Link activity (100 Mbit/s)</td>
</tr>
<tr>
<td></td>
<td>Red</td>
<td>Link established (10 Mbit/s)</td>
</tr>
<tr>
<td></td>
<td>Red, flickering</td>
<td>Link activity (10 Mbit/s)</td>
</tr>
<tr>
<td>NS</td>
<td>Off</td>
<td>Offline or no power</td>
</tr>
<tr>
<td></td>
<td>Green</td>
<td>Online, IP address assigned</td>
</tr>
<tr>
<td></td>
<td>Green, flashing</td>
<td>Online, no IP address assigned</td>
</tr>
<tr>
<td></td>
<td>Red</td>
<td>Fatal error, IP address conflict</td>
</tr>
<tr>
<td></td>
<td>Alternating Red/Green</td>
<td>Firmware update in progress</td>
</tr>
<tr>
<td>MS</td>
<td>Off</td>
<td>No power</td>
</tr>
<tr>
<td></td>
<td>Green</td>
<td>Normal operation</td>
</tr>
<tr>
<td></td>
<td>Red</td>
<td>Fatal error</td>
</tr>
<tr>
<td></td>
<td>Alternating Red/Green</td>
<td>Firmware update in progress</td>
</tr>
</tbody>
</table>

The **LINK/ACT** LED indicators will show a red light for 10 Mbit/s connections. This is normal and does not indicate an error.

The **NS** and **MS** LED indicators may flash green/red briefly during the startup self-test sequence. This is normal and does not indicate an error.
3 Installation

3.1 Installation Overview

Prerequisites
The following items are required for installation and basic configuration:

- Ethernet cable
- USB cable
- Anybus Configuration Manager - X-gateway (1.5.1.1 or later)
- Anybus Configuration Manager - IIoT
- IPconfig (3.2.1.1 or later)

The Anybus Configuration Manager and IPconfig applications can be downloaded from www.anybus.com/support.

Basic installation steps

1. Connect the Anybus X-gateway IIoT Interface to the Ethernet network.
2. Connect a computer to the USB connector on the X-gateway.
3. Power on the X-gateway.
4. Use IPconfig to configure the TCP/IP settings for the IIoT interface.
5. Use Anybus Configuration Manager - X-gateway to configure the data exchange options for the two interfaces in the Anybus X-gateway.
6. Use Anybus Configuration Manager - IIoT to create a tag configuration and transfer it to the IIoT interface.
7. Connect to the web interface of the IIoT interface and configure MQTT/OPC UA communication.
Configuration

4.1 TCP/IP Configuration

4.1.1 Installing the IPconfig Utility

IPconfig is a Windows-based tool for configuration of TCP/IP settings in HMS devices. The tool will detect all compatible and active HMS devices on the local network.

2. Unpack the contents of the zip archive and run the installer program.

4.1.2 Scanning for Connected Devices

When IPconfig is started it will automatically scan all available local networks for HMS devices. Detected devices will be listed in the main window. To refresh the list, click on Scan.

Fig. 3 IPconfig main window

<table>
<thead>
<tr>
<th>IP</th>
<th>SN</th>
<th>GW</th>
<th>DHCP</th>
<th>Version</th>
<th>Type</th>
<th>MAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.10.13.164</td>
<td>255.255.255.0</td>
<td>10.10.13.1</td>
<td>0m</td>
<td>3.25.0</td>
<td>AnybusEthernetIPS</td>
<td>00:30:11:6E:3C:2C</td>
</tr>
<tr>
<td>10.10.13.204</td>
<td>255.255.255.0</td>
<td>0.0.0.0</td>
<td>Off</td>
<td>1.05.1</td>
<td>AnybusNET Gateway</td>
<td>00:30:11:4A:00:13</td>
</tr>
<tr>
<td>10.10.13.188</td>
<td>255.255.255.0</td>
<td>10.10.13.1</td>
<td>0m</td>
<td>1.54.1</td>
<td>EC200</td>
<td>00:30:11:4B:3D:40</td>
</tr>
<tr>
<td>10.10.13.176</td>
<td>255.255.255.0</td>
<td>10.10.13.1</td>
<td>0m</td>
<td>2.40.1</td>
<td>EC300</td>
<td>00:30:11:4B:3D:96</td>
</tr>
<tr>
<td>192.168.0.83</td>
<td>255.255.255.0</td>
<td>192.168.0.254</td>
<td>Off</td>
<td>1.22.0</td>
<td>ModbusRTW</td>
<td>00:30:11:4B:7F:13</td>
</tr>
</tbody>
</table>

IP: IP address of the device
SN: Subnet mask
GW: Default gateway
DHCP: Automatically managed IP configuration
Version: Firmware version
Type: Product name
MAC: Ethernet MAC address (System ID)
4.1.3 Ethernet Configuration

To change the IP settings for a device, double-click on the entry in the main window or right-click on it and select Configuration.

![Ethernet configuration](image)

Enter static IP settings as required, or select DHCP if using dynamic IP addressing.

---

**⚠️** Do not enable DHCP if there is no DHCP server available on the network.

You can add a name for the device in the **Hostname** field. Only characters a–z, A–Z, 0–9 and _ (underscore) are allowed.

The default password for changing IP settings is blank (no password). If a password has been set for the device you must enter it to be able to change the settings.

To set a new password, check the **Change password** box and enter the current password in the **Password** field, then enter the new password in the **New password** field.

---

**⚠️** For security reasons the default password should always be changed.

Click on **Set** to save the new settings. The device will reboot automatically.
4.1.4 IPconfig Settings

Additional settings for IPconfig can be accessed by clicking on Settings.

![IPconfig settings](image)

**Network Interface**

Check this option to select a specific network interface to use when scanning for devices from a computer which has more than one interface. If this option is left unchecked, all available networks will be scanned.

**Internal DHCP Server**

If a device has been set to use DHCP but there is no DHCP server on the network, the device may not be detected by IPconfig. To recover access to the device an internal DHCP server in IPconfig can be temporarily activated:

1. Click the checkbox for **Internal DHCP Server**, then click **OK**. IPconfig will automatically refresh the scan and list the missing device in the main window.
2. Select the device and configure it to use static IP addressing instead of DHCP.
3. Disable the internal DHCP server.

---

Do not enable the internal DHCP server if there is already an active DHCP server on the network.
4.2 Anybus Configuration Manager - X-gateway

The data exchange between the IIoT interface and the other interface in the X-gateway is set up using the Windows-based configuration tool Anybus Configuration Manager - X-gateway, which can be downloaded from www.anybus.com/support.

![Anybus Configuration Manager - X-gateway (IIoT interface settings)](image)

**Network Type**

| Name | Select IIoT Server as the network type. |

**General**

<table>
<thead>
<tr>
<th>Offline option</th>
<th>The action that the X-gateway will take if the IIoT network goes offline.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freeze</td>
<td>keep the current value</td>
</tr>
<tr>
<td>Clear</td>
<td>reset all values to zero</td>
</tr>
</tbody>
</table>

The input and output data sizes for the other network interface should be configured according to the actual PLC setup. Refer to the documentation for the PLC and the built-in help in Anybus Configuration Manager - X-gateway for help regarding the specific network interface.

The output data size is important when setting up the tag information for the IIoT interface. See Anybus Configuration Manager - IIoT, p. 12.

![Anybus Configuration Manager - X-gateway (other interface example settings)](image)
4.3 Anybus Configuration Manager - IIoT

The IIoT interface is configured using Anybus Configuration Manager - IIoT, which can be downloaded from www.anybus.com/support.

![Fig. 8 Anybus Configuration Manager - IIoT](image1)

Setting up the IIoT tags

1. Select either OPC UA or MQTT as communication protocol.
   
   For OPC UA you must also specify a Namespace URI. If this field is left empty a default value will be used.

2. Click on Add to add IIoT tags as required. The data types and addresses of the tags must match the IO data mapping set up with Anybus Configuration Manager - X-gateway.

![Fig. 9 Adding tags](image2)

3. Optionally, select File ► Save to save the current configuration project.

**Note:** The project file saves the current settings in Anybus Configuration Manager - IIoT and can be used as a starting point when creating configurations. It cannot be used as a configuration file by the Anybus X-gateway IIoT Interface.

When you have finished setting up the IIoT tags you must generate a configuration and apply it to the Anybus X-gateway IIoT Interface. This can be done directly from Anybus Configuration Manager - IIoT or by saving a configuration file and using an external FTP client.
Applying the configuration from Anybus Configuration Manager - IIoT

1. Select File ► Generate and send...

![Image](image.png)

**Fig. 10 Sending the configuration**

2. Enter the IP address and the FTP username and password for the IIoT interface.
   
   The default username is **ABX** and the password is **FTPAccess**.

3. Click on **Send** to transfer the configuration to the IIoT interface.
   
   When the transfer is finished, click on **OK** to close the confirmation dialog.
   
   The X-gateway will apply the new configuration and restart automatically.

Generating a configuration file and applying it using an external FTP client

1. Select File ► Generate configuration....

2. Save the generated configuration file to your computer.

3. Open an FTP client and connect to the IP address of the IIoT interface.
   
   The default username is **ABX** and the password is **FTPAccess**.

4. Transfer the saved configuration file from your computer to the IIoT interface.

5. Power cycle the X-gateway to apply the new configuration.
4.4 Web Interface

The web interface of the Anybus X-gateway IIoT Interface provides additional configuration settings and status information. The web interface is accessed by entering the IP address of the Anybus X-gateway IIoT Interface in a web browser. The computer used for access must be in the same Ethernet subnet as the IIoT interface.

Overview

This page provides basic information about the IIoT interface including the serial number and the installed firmware version.

Parameters

This page shows the current data values for the configured IIoT tags.

Network Status

This page shows the current network settings and communication status. This information is mainly intended for troubleshooting.
Network Configuration

IP Configuration
TCP/IP network settings. These parameters can also be configured using `ipconfig`.

Ethernet Configuration
Port 1/2
- 10 HDX = 10 Mbit/s half duplex
- 10 FDX = 10 Mbit/s full duplex
- 100 HDX = 100 Mbit/s half duplex
- 100 FDX = 100 Mbit/s full duplex
- Auto = Automatic mode (default)

MQTT Configuration
Broker URL
The URL of the MQTT broker.

Client identifier
The MQTT ClientID of the Anybus X-gateway IIoT Interface.

Keep alive time (s)
The time interval in seconds between the keep alive messages sent from the client to the broker.

Broker username/password
Authentication to send to the MQTT broker (if required).

Base topic
The base topic name to use in MQTT messages.

Quality of service
The MQTT QoS level to use.

OPC UA Configuration
TCP port
The TCP port to use for OPC UA. Default = 4840.

Discovery server URL
The URL of the OPC UA discovery server (required for timestamp information).
5 Technical Data

Data sheets and additional documentation including technical specifications and compliance information are available at www.anybus.com/support.
Appendix A: License Information

A  License Information

Copyright (c) 2002 Florian Schulze.
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. Neither the name of the authors nor the names of the contributors
   may be used to endorse or promote products derived from this software
   without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHORS 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 AUTHORS 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.

ftpd.c - This file is part of the FTP daemon for lwIP

*******************************************************************************

Print formatting routines

Copyright (C) 2002 Michael Ringgaard. 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. Neither the name of the project 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.

********************************************************************************

FatFs - FAT file system module R0.09b (C)ChaN, 2013

FatFs module is a generic FAT file system module for small embedded systems.
This is a free software that opened for education, research and commercial
developments under license policy of following trems.

Copyright (C) 2013, ChaN, all right reserved.

The FatFs module is a free software and there is NO WARRANTY.
No restriction on use. You can use, modify and redistribute it for
personal, non-profit or commercial products UNDER YOUR RESPONSIBILITY.
Redistributions of source code must retain the above copyright notice.

********************************************************************************

Format - lightweight string formatting library.
Copyright (C) 2010-2013, Neil Johnson
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 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.

********************************************************************************

Source code for the "strtod" library procedure.

Copyright (c) 1988-1993 The Regents of the University of California.
Copyright (c) 1994 Sun Microsystems, Inc.

This software is copyrighted by the Regents of the University of California, Sun Microsystems, Inc., Scriptics Corporation, and other parties. The following terms apply to all files associated with the software unless explicitly disclaimed in individual files.

The authors hereby grant permission to use, copy, modify, distribute, and license this software and its documentation for any purpose, provided that existing copyright notices are retained in all copies and that this notice is included verbatim in any distributions. No written agreement, license, or royalty fee is required for any of the authorized uses. Modifications to this software may be copyrighted by their authors and need not follow the licensing terms described here, provided that the new terms are clearly indicated on the first page of each file where they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. THIS SOFTWARE IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the U.S. government, the Government shall have only "Restricted Rights" in the software and related documentation as defined in the Federal Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2). If you are acquiring the software on behalf of the Department of Defense, the software shall be classified as "Commercial Computer Software" and the Government shall have only "Restricted Rights" as defined in Clause 252.227-7013 (c) (1) of DFARs. Notwithstanding the foregoing, the authors grant the U.S. Government and others acting in its behalf permission to use and distribute the software in accordance with the terms specified in this license.

**************************************************************************

Copyright 2013 jQuery Foundation and other contributors
http://jquery.com/

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.

********************************************************************************

rsvp.js
Copyright (c) 2013 Yehuda Katz, Tom Dale, and contributors

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.

********************************************************************************

libb (big.js)
The MIT Expat Licence.

Copyright (c) 2012 Michael McLaughlin

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,
Appendix A: License Information

TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

********************************************************************************

The "inih" library is distributed under the New BSD license:

Copyright (c) 2009, Ben Hoyt
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 Ben Hoyt 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 BEN HOYT ''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 BEN HOYT 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.

********************************************************************************

lwIP is licenced under the BSD licence:

Copyright (c) 2001-2004 Swedish Institute of Computer Science.
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 name of the author may not be used to endorse or promote products
   derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR `\`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 AUTHOR 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

IlOT User Manual

SCM-1202-109 1.0 en-US
IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.

*******************************************************************************
Copyright (c) 2016 The MINIX 3 Project.
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 name of the author may not be used to endorse or promote products
   derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``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 AUTHOR 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.

Author: David van Moolenbroek <david@minix3.org>

*******************************************************************************
MD5 routines

Copyright (C) 1999, 2000, 2002 Aladdin Enterprises. All rights reserved.

This software is provided 'as-is', without any express or implied
warranty. In no event will the authors be held liable for any damages
arising from the use of this software.

Permission is granted to anyone to use this software for any purpose,
including commercial applications, and to alter it and redistribute it
freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not
claim that you wrote the original software. If you use this software
in a product, an acknowledgment in the product documentation would be
appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be
misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

L. Peter Deutsch
ghost@aladdin.com

*******************************************************************************
open62541 is licensed under the Mozilla Public License v2.0

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/.

To obtain customized changes please contact foss@anybus.com.

********************************************************************************

musl as a whole is licensed under the following standard MIT license:

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.

For additional information about the PCG random number generation scheme, including its license and other licensing options, visit

http://www.pcg-random.org

********************************************************************************

queue.h

Copyright (c) 1991, 1993
The Regents of the University of California. 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. Neither the name of the University 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 REGENTS 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 REGENTS 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.

@(#)queue.h 8.5 (Berkeley) 8/20/94

********************************************************************************
-buffer-based memory allocator
Copyright (C) 2006-2015, ARM Limited, All Rights Reserved
SPDX-License-Identifier: Apache-2.0

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.

********************************************************************************

Eclipse Distribution License - v 1.0
Copyright (c) 2007, Eclipse Foundation, Inc. and its licensors.

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 Eclipse Foundation, 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.

********************************************************************************

Eclipse Public License - v 1.0

IIoT User Manual SCM-1202-109 1.0 en-US
THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS ECLIPSE PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

1. DEFINITIONS

"Contribution" means:

a) in the case of the initial Contributor, the initial code and documentation distributed under this Agreement, and

b) in the case of each subsequent Contributor:

i) changes to the Program, and

ii) additions to the Program;

where such changes and/or additions to the Program originate from and are distributed by that particular Contributor. A Contribution 'originates' from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include additions to the Program which: (i) are separate modules of software distributed in conjunction with the Program under their own license agreement, and (ii) are not derivative works of the Program.

"Contributor" means any person or entity that distributes the Program.

"Licensed Patents" mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

"Program" means the Contributions distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement, including all Contributors.

2. GRANT OF RIGHTS

a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare derivative works of, publicly display, publicly perform, distribute and sublicense the Contribution of such Contributor, if any, and such derivative works, in source code and object code form.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in source code and object code form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution.

No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other...
intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise.

As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any.

For example, if a third party patent license is required to allow Recipient to distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.

3. REQUIREMENTS

A Contributor may choose to distribute the Program in object code form under its own license agreement, provided that:

a) it complies with the terms and conditions of this Agreement; and

b) its license agreement:

i) effectively disclaims on behalf of all Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;

ii) effectively excludes on behalf of all Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;

iii) states that any provisions which differ from this Agreement are offered by that Contributor alone and not by any other party; and

iv) states that source code for the Program is available from such Contributor, and informs licensees how to obtain it in a reasonable manner on or through a medium customarily used for software exchange.

When the Program is made available in source code form:

a) it must be made available under this Agreement; and

b) a copy of this Agreement must be included with each copy of the Program.

Contributors may not remove or alter any copyright notices contained within the Program.

Each Contributor must identify itself as the originator of its Contribution, if any, in a manner that reasonably allows subsequent Recipients to identify the originator of the Contribution.

4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering
should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense. For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial Contributor must pay those damages.

5. NO WARRANTY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE PROGRAM IS PROVIDED 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. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), 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 OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.
If Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. The Eclipse Foundation is the initial Agreement Steward. The Eclipse Foundation may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number.

The Program (including Contributions) may always be distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to distribute the Program (including its Contributions) under the new version. Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted under this Agreement are reserved.

This Agreement is governed by the laws of the State of New York and the intellectual property laws of the United States of America. No party to this Agreement will bring a legal action under this Agreement more than one year after the cause of action arose. Each party waives its rights to a jury trial in any resulting litigation.
This page intentionally left blank