

Net-X-Convert

User Guide



© 2010-2024 Drastic Technologies Ltd.
All Rights Reserved
February 9, 2024

COPYRIGHTS AND TRADEMARK NOTICES.....	4
General.....	4
GNU LESSER GENERAL PUBLIC LICENSE.....	10
0. Additional Definitions.....	10
1. Exception to Section 3 of the GNU GPL.....	10
2. Conveying Modified Versions.....	10
3. Object Code Incorporating Material from Library Header Files.....	11
4. Combined Works.....	11
5. Combined Libraries.....	11
6. Revised Versions of the GNU Lesser General Public License.....	12
MPEG Disclaimers.....	13
MPEGLA MPEG2 Patent.....	13
MPEGLA MPEG4 VISUAL.....	13
MPEGLA AVC.....	13
MPEG4 SYSTEMS.....	13
Limited Warranty and Disclaimers.....	14
Warranty Remedies.....	14
Software Updates.....	14
Restrictions and Conditions of Limited Warranty.....	14
Limitations of Warranties.....	14
Damages.....	15
INTRODUCTION.....	16
THEORY OF OPERATION.....	16
Typical Application.....	17
WINDOWS X64 INSTALLATION – QUICK START.....	18
Install OS and Net-X-Convert.....	18
OPERATIONS GUIDE.....	19
Theory of Operation.....	19
Installing Net-X-Convert.....	19
Net-X-Copy Command Line.....	20
Net-X-Copy - Metadata Extraction.....	22
Metadata Extraction Command Line.....	22
Metadata Extraction To A File.....	22
Command Line Parameters.....	22
Configuration.....	27
App Specific Configuration.....	27
General Configuration.....	27
Enable/Disable RTIN File Generation.....	28
Enable/Disable XMP File Generation.....	29
Enable/Disable ACK Generation.....	30

OAuth 2.0 Configuration.....	31
SysLog Output.....	31
ACK(R) Files.....	31
RTIN (real time index) Files.....	31
MediaReactor Workstation.....	32
videoQC.....	32
Setting up Cloud (OAuth 2.0) Access for Drastic software.....	32
Cloud file access - Direct.....	32
Cloud file access - https.....	32
Setting up Amazon S3 AWS Access for Drastic software.....	35
Amazon S3 Cloud file access - https.....	35
Windows:.....	35
Error Returns – Net-X-Copy.....	36

Copyrights and Trademark Notices

General

Copyright 2023, Drastic Technologies Ltd. All rights reserved worldwide. No part of this publication may be reproduced, transmitted, transcribed, altered, or translated into any languages without the written permission of Drastic Technologies. Information and specifications in this document are subject to change without notice and do not represent a commitment on the part of Drastic Technologies.

Adobe: Adobe® HTTP Dynamic Streaming Copyright © 2014 of Adobe Systems All rights reserved. Adobe, the Adobe logo, Adobe Premiere, Adobe After Effects, Creative Cloud, Frame.io, and Iridas are either registered trademarks or trademarks of Adobe in the United States and/or other countries.

Advanced Micro Devices, Inc. - AMD is a trademark of Advanced Micro Devices, Inc.

ADVANTECH CO., LTD - ADVANTECH and B&B are trademarks of ADVANTECH CO., LTD

AJA: AJA® is a registered trademark of AJA Video Systems, Inc. AJA™ is a trademark of AJA Video Systems, Inc. Corvid Ultra®, KONA®, IO®, KUMO®, U-Tap®, and T-Tap® are registered trademarks of AJA Video Systems, Inc.

Amazon Web Services, Inc. - Amazon, AWS and Smile Logo, Powered by AWS Logo, AWS Co-Marketing Tools, the Partner Logo, the Program Marks, Amazon Web Services, AWS, AWS S3, and the names of AWS products, services, programs, and initiatives are trademarks or registered trademarks of Amazon Web Services, Inc.

Amberfin Limited - AMBERFIN is a trademark of Amberfin Limited.

Apple: Apple, the Apple logo, Final Cut, Final Cut Pro, Apple TV, iOS, iPad, iPhone, iPod touch, iTunes, Mac, Mac OS X, macOS, Shake, Final Cut Pro, ProRes, High Sierra, Mojave, M1, M2, Safari, and QuickTime are trademarks of Apple Inc., registered in the U.S. and other countries. Bonjour, the Bonjour logo, and the Bonjour symbol are trademarks of Apple, Inc.

ARRI AG – ARRI, Arri T-Link, and Alexa are registered trademarks of the ARRI Group

ASSIMILATE® Inc. - Assimilate SCRATCH and Assimilate SCRATCH Lab are either trademarks or registered trademarks of ASSIMILATE® Inc. or its subsidiaries in the United States and/or other countries.

ATI TECHNOLOGIES ULC - ATI is a trademark of ATI TECHNOLOGIES ULC

Autodesk, Inc. - Autodesk, Discreet, Flame, Flare, Smoke, Lustre, Maya, and Moxion are either trademarks or registered trademarks of Autodesk, Inc. or its subsidiaries in the United States and/or other countries.

Avid: Avid Media Composer®, Avid MediaCentral®, Avid Interplay®, and Avid NewsCutter® are either trademarks or registered trademarks of Avid Technology, Inc. or its subsidiaries in the United States and/or other countries.

Blackmagic: DaVinci Resolve, DaVinci Fusion, UltraStudio, DeckLink, Intensity Pro 4K, UltraScope, and RED are either trademarks or registered trademarks of Blackmagic Design Pty. Ltd. or its subsidiaries in the United States and/or other countries.

Bluefish444: Bluefish444, IngeSTore, Symmetry, Kronos, Epoch, Epoch:Neutron, Fury, Lust, Vengeance HD, Deepblue, Envy SD, and Epoch:SuperNova are trademarks of Bluefish Technologies

Boris FX, Inc. - Boris FX, Sapphire, and Silhouette are trademarks of Boris FX, Inc.

CANON KABUSHIKI KAISHA - CANON is a trademark of CANON KABUSHIKI KAISHA

Changsha Kiloview Electronics Co., Ltd - KILOVIEW is a trademark of Changsha Kiloview Electronics Co., Ltd

CineSys LLC – CineSys is a registered trademark of CineSys LLC.

Cisco Systems, Inc. - Cisco, and Webex are registered trademarks of Cisco Systems, Inc.

Cloudfirst Technology Solutions Inc. - Cloudfirst is a registered trademark of Cloudfirst Technology Solutions Inc.

Codex Corporation - CODEX and Action Cam are trademarks of Codex Corporation

Control Corporation - Control is a registered trademark of Control Corporation

ConnectX, Inc - CONNECTX is a trademark of ConnectX, Inc

CoreCodec, Inc. - MATROSKA is a trademark of CoreCodec, Inc.

Corel Corporation - Pinnacle is a registered trademark of Corel Corporation

CORSAIR MEMORY, INC. - ELGATO is a trademark of CORSAIR MEMORY, INC.

Digital Vision World - Digital Vision World is an operating brand of BlissTek Ltd. BlissTek Ltd. Digital Vision Nucoda is either a trademark or registered trademark of BlissTek Ltd. or its subsidiaries in England, Wales, and/or other countries.

DIGITNOW! - Digitnow is a trademark of DIGITNOW!

Docker Inc. - DOCKER is a trademark of Docker, Inc.

Dolby: Dolby, Dolby Vision, the double-D symbol, and Millicast are registered trademarks of Dolby Laboratories.

Drastic Technologies: 2110Scope, 4KScope, ccConvert, Drastic Technologies, DrasticPreview, FlowCaster, HDRScope, Media File Scanner, MediaNXS, MediaReactor, MediaReactor Workstation, MR Lite, ndiScope, Net-X-Code Channel, Net-X-Code Server, Net-X-Convert, Net-X-Proxy, Network Video Analyzer, NetXfer, NETXROUTER, QuickClip, sdiScope, SyncControl, TcCalc, videoQC Inspect, videoQC Pro, videoQC View, and videoQC Workstation are trademarks of Drastic Technologies Ltd. All other trademarks are the property of their respective owners.

DSC Labs - DSC Labs' CamBook, CamAlign, and ChromaDuMonde charts are trademarks or registered trademarks of DSC Labs

Dublin Core™ Metadata Initiative - "Dublin Core" is a protected under common law trademark of the Dublin Core™ Metadata Initiative.

Eastman Kodak Company - Cineon™ is a trademark of Eastman Kodak Company

Eaton Corporation plc - Eaton, Tripp Lite, and PowerAlert are registered trademarks of Eaton Corporation plc

Empress Media Asset Management (eMAM) – eMAM, and eMAMDirector are registered trademarks of Empress Media Asset Management (eMAM)

Epiphan - All Epiphan product names and logos are trademarks or registered trademarks of Epiphan

Evercast, LLC - EVERCAST is a trademark owned by Evercast, LLC

Evertz Technologies Limited - Evertz is a registered trademark of Evertz Technologies Limited

EVS Broadcast Equipment - EVS is a registered trademark of EVS Broadcast Equipment

Fabrice Bellard - FFmpeg is a trademark of Fabrice Bellard

Filestage GmbH - Filestage is a trademark of Filestage GmbH

FilmLight Ltd. - FilmLight and BaseLight are trademarks of FilmLight Ltd.

Fraunhofer IIS and Thomson Multimedia: MPEG Layer-3 audio coding technology licensed from Fraunhofer IIS and Thomson Multimedia.

Free Software Foundation (FSF) - Portions of this product are licensed under LGPL, governed by the GNU LESSER GENERAL PUBLIC LICENSE, published by the Free Software Foundation (FSF).

Ftrack AB - FTRACK is a trademark and brand of Ftrack AB

Gen Digital Inc. (formerly Symantec Corporation and NortonLifeLock) - Symantec, Symantec Endpoint Virtualization Suite, Sygate, Altiris, and Altiris Virtualization Agent are registered trademarks of Gen Digital Inc.

Google: YouTube, Google, Google Cloud, Google.meet.com, and Android are registered trademarks of Google LLC

GoPro, Inc. - Cineform® is a trademark or registered trademark of GoPro, Inc.

Grass Valley USA, LLC - Grass Valley®, GV®, the Grass Valley logo, and EDIUS® are trademarks or registered trademarks of Grass Valley USA, LLC, or its affiliated companies in the United States and other jurisdictions.

HaiVision Systems, Inc. - Haivision is a registered trademark of HaiVision Systems, Inc.

Harris Corporation - Harris, and Leitch Technology Corp. are registered trademarks of Harris Corporation

Hewlett Packard Enterprise Company - OpenGL is a registered trademark and the OpenGL SC logo is a trademark of Hewlett Packard Enterprise Company

Hewlett Packard Group LLC - HP is a trademark of HP Hewlett Packard Group LLC.

Ikegami Electronics (USA) Inc. - EditCam is a registered trademark of Ikegami Electronics (USA) Inc.

Indiecam GmbH - IndieCam is a registered trademark of Indiecam GmbH

INOGENI Inc - INOGENI® is a Registered Trademark and TOGGLE is a Trademark of INOGENI Inc

Institute of Electrical and Electronics Engineers - IRE is a trademark of the Institute of Electrical and Electronics Engineers

INTEL CORPORATION - INTEL is a trademark of INTEL CORPORATION

International Business Machines Corporation (“IBM”) - IBM® is a trademark owned by International Business Machines Corporation (“IBM”) and might also be trademarked or a registered trademark in other countries

Interactive Effects, Inc. - Piranha is a registered trademark of Interactive Effects, Inc.

IO Industries Ltd. - IO Industries is a trademark of IO Industries Ltd.

Iteris, Inc. - Odetics is a registered trademark of Iteris, Inc.

JVC KENWOOD CORPORATION - JVC is a trademark of JVC KENWOOD CORPORATION

Kinefinity Inc. - KINEFINITY is a trademark of Kinefinity Inc.

L3Harris Technologies, Inc. - Louth is a trademark of L3Harris Technologies, Inc.

Linus Torvalds - Linux® is the registered trademark of Linus Torvalds in the U.S. and other countries.

Logitech International SA - LOGITECH is a trademark of Logitech International SA

Magic Lantern - Magic Lantern is a registered trademark of Magic Lantern

MAINCONCEPT GMBH - MAIN CONCEPT is a trademark of MAINCONCEPT GMBH

Marshall Electronics, Inc. - Marshall is a registered trademark of Marshall Electronics, Inc.

Matrox Electronic Systems, Ltd - Matrox and Matrox product names are registered trademarks and/or trademarks of Matrox Electronic Systems, Ltd.

MediaArea.net SARL - MediaInfo - Copyright© 2002-2013 MediaArea.net SARL. All rights reserved.

Meta Platforms, Inc - Facebook and Instagram are trademarks of Meta Platforms, Inc

Microsoft: Windows®, Video For Windows (VFW), DirectShow, Microsoft, Skype, Microsoft Azure, Microsoft Teams, Wave Mapper, Microsoft, Windows NT|2000|XP|XP Professional|Server 2003|Server 2008 |Server 2012, Windows 7, Windows 8, Media Player, Media Encoder, .Net, Internet Explorer, SQL Server 2005|2008|2012|2014, Windows Media Technologies and Internet Explorer are trademarks of Microsoft Corporation.

MPEG LA - MPEG LA licenses patent pools covering essential patents required for use of the MPEG-2, MPEG-4, IEEE 1394, VC-1, ATSC, MVC, MPEG-2 Systems, AVC/H.264 and HEVC standards.

Nanjing Magewell Electronics Co. - Magewell™, ULTRA STREAM® and (the MAGEWELL Logo) are trademarks or registered trademarks of Nanjing Magewell Electronics Co.

Netflix, Inc. - Netflix is a registered trademark of Netflix, Inc.

NewTek, Inc. - NDI, TriCaster, 3Play, TalkShow, Video Toaster, LightWave 3D, and Broadcast Minds are registered trademarks of NewTek, Inc.

Nokia Corporation - OSPREY is a trademark owned by Nokia Corporation

NVIDIA Corporation - NVIDIA, the NVIDIA logo, NVIDIA Quadro, Rivermax, BlueField2, PhysX, and NVIDIA RTX are trademarks and/or registered trademarks of NVIDIA Corporation in the U.S. and/or other countries

Object Matrix Limited - ObjectMatrix, and Object Matrix are registered trademarks of Object Matrix Limited

Omneon Video Networks, Inc - Omneon is a trademark of Omneon Video Networks, Inc

ONVIF - the ONVIF primary trademark is the word, "ONVIF". This trademark has been registered in the United States, European Union, China, Japan and other countries throughout the world.

Oracle Corporation - Oracle®, Java, Front Porch Digital, and MySQL are registered trademarks of Oracle Corporation and/or its affiliates.

Panasonic Holdings Co., Ltd - Panasonic, and Varicam are trademarks of Panasonic Holdings Co., Ltd

Pioneer Corporation - Pioneer is a registered trademark of Pioneer Corporation

RE:Vision Effects, Inc. - RE:Vision Effects is a registered trademark of RE:Vision Effects, Inc.

Red Hat, Inc. - Red Hat, and the Red Hat logo are trademarks or registered trademarks of Red Hat, Inc. or its subsidiaries in the United States and other countries

QT: The Qt Toolkit is copyright by The Qt Company and/or its subsidiary(-ies) and other contributors. The Qt Toolkit is used under the terms of the GNU Lesser General Public License v. 3 and the GNU Lesser General Public License v. 2.1 (both jointly "LGPL"). On each supported platform, the Tool dynamically links to the unmodified Qt libraries, as provided by the Qt Project in the pre-compiled binary format. In compliance with LGPL, all the relevant information about downloading, installing, and building the Qt Toolkit from sources is available from <http://www.drastic.tv>. As there have been no modifications, the main source of the information and most of the web links provided here come from the Qt Company's website.

Shenzhen Yunlang Technology Co., Ltd. - MOKOSE is a trademark of Shenzhen Yunlang Technology Co., Ltd.

Sigma Design Company, LLC - Sigma Design is a registered trademark of Sigma Design Company, LLC

Snell & Wilcox Limited - SNELL & WILCOX, and Quantel are trademarks owned by Snell & Wilcox Limited

Society of Motion Picture and Television Engineers - SMPTE is a trademark of Society of Motion Picture and Television Engineers.

SoftNI Corporation – SoftNI is a trademark of SoftNI Corporation

Sony Corporation – Sony, Sony DVD Architect, DVD, Catalyst, and Vegas are trademarks of Sony Corporation and/or its affiliates.

Streambox Inc. - Streambox is a trademark of Streambox Inc.

Technicolor Creative Studios SA - Technicolor is a trademark of Technicolor Creative Studios SA

TechSmith Corporation - CAMTASIA STUDIO is a trademark of TechSmith Corporation

Tektronix, Inc. - Tektronix® and all identified Tektronix trademarks and logos are the property of Tektronix, Inc. or its wholly-owned subsidiaries

Telestream, LLC - Telestream, is a registered trademark, and MacCaption and CaptionMaker are trademarks of Telestream, LLC

The Apache Software Foundation (ASF) - Apache is a registered trademark of The Apache Software Foundation

The Foundry Visionmongers Ltd. - Nuke™ is a trademark of The Foundry Visionmongers Ltd.

The Perl Foundation - Perl and the Perl logo are trademarks of The Perl Foundation

Trend Micro Inc. - TrendMicro, and TrendMicro System Protection and registered trademarks of Trend Micro Inc.

Truevision, Inc - TARGA is a registered trademark of Truevision, Inc

Twitch Interactive, Inc - TWITCH, the TWITCH Logo, the Glitch Logo, and/or TWITCHTV are trademarks of Twitch Interactive, Inc. or its affiliates.

VideoLAN Non-profit Organization - VideoLAN, VLC, VLC media player and x264 are trademarks internationally registered by the VideoLAN non-profit organization

Vision Research, Inc - PHANTOM is a trademark of Vision Research, Inc

Weisscam GmbH - Weisscam is a trademark and brand of Weisscam GmbH

Wizards of OBS, LLC – UNIX, OBS, Open Broadcast Software, the OBS logo, and OBS Studio are trademarks of Wizards of OBS, LLC (The Company)

Wowza Media Systems, LLC - Wowza is a trademark of Wowza Media Systems, LLC

Xceed Software Inc. - Xceed DataGrid for JavaScript, Xceed Ultimate ListBox for Silverlight, Xceed DataGrid for Silverlight, Xceed DataGrid for WPF, Xceed Grid for .NET, Xceed Zip for .NET, Xceed Real-Time Zip for Silverlight, Xceed Upload for Silverlight, Xceed Zip Compression Library, Xceed FTP for .NET, Xceed Chart for .NET, Xceed Chart for ASP.NET, Xceed SmartUI for .NET, Xceed SmartUI, Xceed Encryption Library, Xceed Binary Encoding Library, Xceed Streaming Compression Library, Xceed Streaming Compression for .NET, Xceed Zip for .NET Compact Framework, Xceed Ultimate Suite, Xceed Data Manipulation Suite, Xceed Absolute Packager are trademarks of Xceed Software Inc.

Zapex Technologies - Zapex is a registered trademark of Zapex Technologies

Zhang Haijun - RYBOZEN is a trademark of Zhang Haijun

Ziflow Limited - Ziflow is a trademark of Ziflow Limited

Zixi - Zixi Software and any logos or icons identifying Zixi and the Zixi Software are trademarks of Zixi.

ZLIB: The ZLIB Compressed Data Format Specification is Copyright (C) 1995-2013 Jean-Loup Gailly and Mark Adler.

Zoom Video Communications, Inc. - Zoom and the Zoom logo are trademarks of Zoom Video Communications, Inc.

x264 LLC: The product is manufactured by Drastic Technologies under license from x264 LLC.

LGPL: Portions of this product are licensed under LGPL, governed by the following license:

GNU LESSER GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright © 2007 Free Software Foundation, Inc. <<https://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, “this License” refers to version 3 of the GNU Lesser General Public License, and the “GNU GPL” refers to version 3 of the GNU General Public License.

“The Library” refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An “Application” is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A “Combined Work” is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the “Linked Version”.

The “Minimal Corresponding Source” for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The “Corresponding Application Code” for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or

- b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.
- d) Do one of the following:
 - 0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.
 - 1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.
- e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

5. Combined Libraries.

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 that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.
- b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU 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 as you received it specifies that a certain numbered version of the GNU Lesser General Public License “or any later version” applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

Other brands, product names, and company names are trademarks of their respective holders, and are used for identification purpose only.

MPEG Disclaimers

MPEGLA MPEG2 Patent

ANY USE OF THIS PRODUCT IN ANY MANNER OTHER THAN PERSONAL USE THAT COMPLIES WITH THE MPEG-2 STANDARD FOR ENCODING VIDEO INFORMATION FOR PACKAGED MEDIA IS EXPRESSLY PROHIBITED WITHOUT A LICENSE UNDER APPLICABLE PATENTS IN THE MPEG-2 PATENT PORTFOLIO, WHICH LICENSE IS AVAILABLE FROM MPEG LA, LLC, 4600 S. Ulster Street, Suite 400, Denver, Colorado 80237 U.S.A.

MPEGLA MPEG4 VISUAL

THIS PRODUCT IS LICENSED UNDER THE MPEG-4 VISUAL PATENT PORTFOLIO LICENSE FOR THE PERSONAL AND NON-COMMERCIAL USE OF A CONSUMER FOR (i) ENCODING VIDEO IN COMPLIANCE WITH THE MPEG-4 VISUAL STANDARD (“MPEG-4 VIDEO”) AND/OR (ii) DECODING MPEG-4 VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL AND NON-COMMERCIAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION INCLUDING THAT RELATING TO PROMOTIONAL, INTERNAL AND COMMERCIAL USES AND LICENSING MAY BE OBTAINED FROM MPEG LA, LLC. SEE [HTTP://WWW.MPEGLA.COM](http://www.mpegla.com).

MPEGLA AVC

THIS PRODUCT IS LICENSED UNDER THE AVC PATENT PORTFOLIO LICENSE FOR THE PERSONAL USE OF A CONSUMER OR OTHER USES IN WHICH IT DOES NOT RECEIVE REMUNERATION TO (i) ENCODE VIDEO IN COMPLIANCE WITH THE AVC STANDARD (“AVC VIDEO”) AND/OR (ii) DECODE AVC VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE AVC VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION MAY BE OBTAINED FROM MPEG LA, L.L.C. SEE [HTTP://WWW.MPEGLA.COM](http://www.mpegla.com).

MPEG4 SYSTEMS

THIS PRODUCT IS LICENSED UNDER THE MPEG-4 SYSTEMS PATENT PORTFOLIO LICENSE FOR ENCODING IN COMPLIANCE WITH THE MPEG-4 SYSTEMS STANDARD, EXCEPT THAT AN ADDITIONAL LICENSE AND PAYMENT OF ROYALTIES ARE NECESSARY FOR ENCODING IN CONNECTION WITH (i) DATA STORED OR REPLICATED IN PHYSICAL MEDIA WHICH IS PAID FOR ON A TITLE BY TITLE BASIS AND/OR (ii) DATA WHICH IS PAID FOR ON A TITLE BY TITLE BASIS AND IS TRANSMITTED TO AN END USER FOR PERMANENT STORAGE AND/OR USE.

SUCH ADDITIONAL LICENSE MAY BE OBTAINED FROM MPEG LA, LLC. SEE [HTTP://WWW.MPEGLA.COM](http://www.mpegla.com) FOR ADDITIONAL DETAILS.

Limited Warranty and Disclaimers

Drastic Technologies Ltd (the Company) warrants to the original registered end user that the product will perform as stated below for a period of ninety (90) days from the date of licensing or; in the case of hardware, for a period matching the warranty period offered by the original manufacturer of said equipment.

Hardware and Media—The Product hardware components, if any, including equipment supplied but not manufactured by the Company but NOT including any third party equipment that has been substituted by the Distributor or customer for such equipment (the “Hardware”), will be free from defects in materials and workmanship under normal operating conditions and use.

Warranty Remedies

Your sole remedies under this limited warranty are as follows:

Hardware and Media—The Company will either repair or replace (at its option) any defective Hardware component or part, or Software Media, with new or like new Hardware components or Software Media. Components may not be necessarily the same, but will be of equivalent operation and quality.

Software Updates

Except as may be provided in a separate agreement between Drastic Technologies and You, if any, Drastic Technologies is under no obligation to maintain or support the Software and Drastic Technologies has no obligation to furnish you with any further assistance, technical support, documentation, software, update, upgrades, or information of any nature or kind.

Restrictions and Conditions of Limited Warranty

This Limited Warranty will be void and of no force and effect if (i) Product Hardware or Software Media, or any part thereof, is damaged due to abuse, misuse, alteration, neglect, or shipping, or as a result of service or modification by a party other than the Company, or (ii) Software is modified without the written consent of the Company.

Limitations of Warranties

THE EXPRESS WARRANTIES SET FORTH IN THIS AGREEMENT ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT

LIMITATION, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. No oral or written information or advice given by the Company, its distributors, dealers or agents, shall increase the scope of this Limited Warranty or create any new warranties.

Geographical Limitation of Warranty—This limited warranty is valid only within the country in which the Product is purchased/licensed.

Limitations on Remedies—YOUR EXCLUSIVE REMEDIES, AND THE ENTIRE LIABILITY OF Drastic Technologies Ltd WITH RESPECT TO THE PRODUCT, SHALL BE AS STATED IN THIS LIMITED WARRANTY. Your sole and exclusive remedy for any and all breaches of any Limited Warranty by the Company shall be the recovery of reasonable damages which, in the aggregate, shall not exceed the total amount of the combined license fee and purchase price paid by you for the Product.

Damages

Drastic Technologies Ltd SHALL NOT BE LIABLE TO YOU FOR ANY DAMAGES, INCLUDING ANY LOST PROFITS, LOST SAVINGS, OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF YOUR USE OR INABILITY TO USE THE PRODUCT, OR THE BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, EVEN IF THE COMPANY HAS BEEN ADVISED OF THE POSSIBILITY OF THOSE DAMAGES, OR ANY REMEDY PROVIDED FAILS OF ITS ESSENTIAL PURPOSE.

Further information regarding this limited warranty may be obtained by writing:

Drastic Technologies Ltd
523 The Queensway, Suite 201
Toronto, ON, M8V 1J7
Telephone: (416) 255-5636

Introduction

Net-X-Convert is a conversion software that can be run alone or as part of a distributed conversion system. There are two levels of Net-X-Convert:

1. Net-X-Proxy which allows all input types to be converted to MP4, fMP4, HLS or MP3
2. Net-X-Convert which adds broadcast outputs like MXF, MOV, AVI, DPX, DNG, etc.

The standalone version is normally called by command line.

Net-X-Convert is also included in our Net-X-Code Server software, which uses one or more Net-X-Base server instances to create groups of conversion servers. The various converts auto-detect and join user-defined enterprise groups on one or more servers within a network. Once connected, the controller/user can configure the system in real time via the HTTP/RESTful interface.

For the latest Net-X-Convert and Net-X-Proxy information, please see:

www.net-x-convert.com

For the latest Net-X-Code Server information, please see:

www.net-x-code.com

Theory of Operation

Net-X-Convert standalone software is a command line conversion system. Net-X-Convert as a component of Net-X-Code Server software is a comprehensive solution for ingest, transcoding, and delivery of media assets.

Net-X-Convert can be run on one or more servers and be controlled from one, central interface. This section of the manual will give an overview of how the various parts of Net-X-Convert interact to make it easier to design deployments and implement controllers using the API described in the next section.

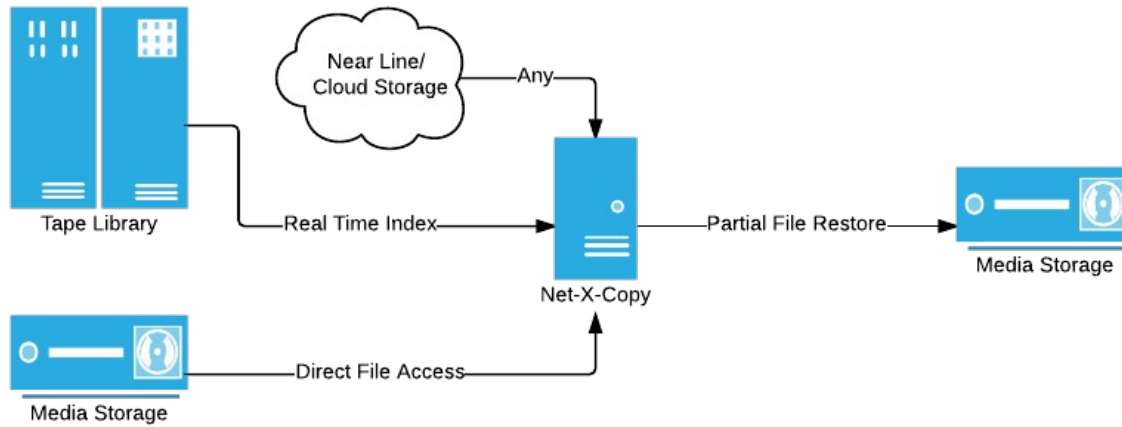
Net-X-Convert is made up of a number of servers, programs, and plugins:

Net-X-Copy/Convert/Proxy: file conversion, partial file restore, MP4 HLS DASH and MP3 proxy generation.

Net-X-Player: provides an HTML5 based web player that can play time coded, frame accurate MP4 files, including playback while they are still recording. Net-X-Player can also generate clipping commands to use on live, or recorded streams.

Typical Application

Net-X-Convert Partial File Restore, Conversion and Proxy



Windows x64 Installation – Quick Start

Net-X-Convert should be installed on Microsoft Windows Server 2008 R2 64 Bit but also can be installed on Windows 7 x64 or 10 x64. You will also need to install a UwAmp server to host the web pages. This document will list the basic setup of Net-X-Convert in Windows.

Install OS and Net-X-Convert

- Install Windows 64 bit OS.
- Download and install UwAmp
 - <http://www.uwamp.com/en/?page=download>
 - Open the UwAmp application. This will automatically start up the server.
 - Navigate to localhost in a browser and confirm that the Apache server is running.
- Download and unpack Net-X-Convert/Proxy:
 - https://drastic.tv/downloads/net-x-convert/SetupNet-X-Proxy_x64_7_0.zip
 - https://drastic.tv/downloads/net-x-convert/SetupNet-X-Convert_x64_7_0.zip
 - This will install the Net-X-Convert servers to: C:\Program Files\Net-X-Convert_7
 - It will also install the web pages into UwAmp: C:\UwAmp\www\
- Download NetXCodeDemoMedia.zip
 - (please send a request to sales@drastictech.com)
 - Unzip it to C:\UwAmp\www\
 - (see next page for more information on this zip)
- License: You must get at least a trial license for Net-X-Convert/Proxy to function. Run 'License Net-X-Code', fill in the user and email, generate the code and email it to authorization@drastictech.com with a request for temporary license for Net-X-Convert to test with. There is more information on licensing available here:
 - <http://license.drastictech.com>
- If you are using RTP/UDP streams over 10 mbs, you should modify Windows buffers for higher multicast buffer sizes. In 'HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\AFD\Parameters' change or add the DWORDs 'DefaultReceiveWindow = 6679200' and 'DefaultSendWindow = 6679200'.
- Restart the system.

Operations Guide

This section describes how to use Net-X-Convert.

Theory of Operation

Net-X-Convert is a distributed capture, stream, restore, and conversion system. It can be run on one or more servers, and still be controlled from one, central interface. This section of the manual will give an overview of how the various parts of Net-X-Convert interact to make it easier to design deployments and implement controllers using the API described in the next section.

Net-X-Convert is made up of a number of servers and programs:

Net-X-Copy – this program is called to index (RTIN), clip, restore, re-wrap and convert files on disc, tape, cloud or other sources to local or network storage.

Net-X-Player – is an HTML5 web video based player that allows frame accurate time code playback of proxy assets and can be used to send clipping commands for the proxy or original video files.

Installing Net-X-Convert

Installing Net-X-Convert in Windows

GUI: Double click on the installer

Cmd: installer.exe --mode silent

Installing Net-X-Convert/Net-X-Proxy macOS:

GUI: Double click on the installer

Net-X-Copy Command Line

NetXCopy -s <sourcefile> -t <targetfile> [-a <ackfile>] -p <profile> [-in <00:01:00:00> -out <00:02:00:00> -fg]

-s <sourcefile> The source file name and path

-t <targetfile> The target file name and path

-a <ackfile> The ACK file name and path. This is the XML acknowledgment file made after a copy

-p <profile> One of the following profile settings

- copy – copy the whole file
- wrap – re wrap file or part of a file
- index – create an RTIndex for a file
- mp3-128kbps - Audio only MPEG Layer 3 audio
- mov-YCbCr8Bit – QuickTime MOV 8 bit uncompressed YCbCr file
- mov-dvcprohd - QuickTime MOV DVHD 100
- mp4-h264 - MP4 with h264, original size
- mxf-xdcam-720p - MXF Sony XDCam 720p
- mxf-dvcprohd-720p - MXF DVHD 720p
- mxf-xdcam-1080i - MXF Sony XDCam 1080i
- mxf-dvcprohd-1080i - MXF DVHD 1080i
- mxf-OP1a-MPEG - MXF OP1a MPEG (XDCam like, 16 audio channels)
- mxf-op1a-h264 - MXF h.264
- mxf-OP1a-HDF - MXF MPEG HDF
- mxf-as-11-sd-dpp - MXF DPP SD IMX
- mxf-as-11-hd-dpp - MXF DPP HD AVCi
- mov-proreshq - QuickTime MOV ProRes HQ
- mov-prores422 - QuickTime MOV ProRes 422
- mxf-as-11-sd-pal-dpp - MXF AS-11 SD PAL DPP
- mxf-as-11-sd-ntsc-dpp - MXF AS-11 SD NTSC DPP
- scaledown2000k - MP4 264 960x540, 2mbs
- scaledown500k - MP4 264 480x272, 0.5mbs
- hd1080-5000kbs - MP4 - HD 1080 with a target bitrate of 5 mbs
- hd720-2500kbs - MP4 - HD 720p with a target bitrate of 2.5 mbs
- hd360-1250kbs - MP4 - HD 360p with a target bitrate of 1.25 mbs
- h264-7500kbs - MP4 - Any resolution with a target bitrate of 7.5 mbs
- Proxy-h264-5000kbs - MP4 high quality proxy for web
- LBR-h264-10000kbs - Low bit rate, high quality local MP4
- mxf-OP1a-JPEG2K - Samma style JPEG2000 YCbCr
- mxf-AS-02-h264-10 - 10 bit 50 Mbs h.264 in AS-02 MXF
- DASH-MP4-Multibitrate - Multi bitrate MP4s with DASH files
- HLS-TS-Multibitrate - Multi bitrate TS streams with M3U8 files

- TS-TR-01-JPEG-2000 - TR-01 JPEG-2000 transport stream
- mxf-OP1a_HBR_50 - MXF OP1a h264 4:2:2 10 bit
- OP1a_HBR_50 - OP1a MXF h264 4:2:2 10 bit
- mp4-XAVC-S_4_2_0 - MP4 Sony XAVC-S 4:2:0
- mp4-XAVC-S_4_2_2 - MP4 Sony XAVC-S 4:2:2

-type mxf-op1a -- the exact file type to write, otherwise auto

- mxf-op1a – standard OP1a
- mxf-sonyhd – Sony XDCam compatible
- mxf-as02 – AS-02 spec MXF
- mp4-fmp4 – Fragmented MP4 (normal MP4 if not set)

-in <00:01:00:00> the starting point for the output file in time code or absolute position

-out <00:02:00:00> the ending point for the output file in time code or absolute position

-absin <200> the absolute (zero based) start time for the output file (overrides -in)

-absout <400> the absolute (zero based) end time, exclusive, for the output file (overrides -out)

-tcoffset <100> an offset to apply to all time code operations

-tc <100> time code

-width <width> the width of the video output, overrides when not fixed by codec

-height <height> the height of the video output, overrides when not fixed by codec

-copy make a copy of the file section we need, instead of reading directly

-dest folder or folder and file name for the temp file when using copy

-cc <mcc/scc file> -- replacement closed caption file>

-afile <path-audio-file> -- replacement source audio track<s>

-v <path-video-file> -- replacement source video track

-stereo - Mix all the audio channels into a single stereo pair

-aroute <7812345> - Route each channel from an incoming channel (default 12345678)

-uuid <uuid string> - override the UUID of the file with this one

-kilobitrate <kbit rate> - override the kilo bit rate

-h26xprofile <baseline/main/high/high10/high422/high444> override the profile type

-h26xlevel <51> override the level

-encodemode <0/1> 0 normal, 1 fastest

-gopsize <15> size of encoded gop

-tempfolder – Temporary folder to store partial file

-fg force the GUI on

-fc force command line

For JPEG picons

-pisrc <file-to-picon> -- source for the picon

-pidst <where-to-make-picon> -- target folder and name

-pisize <size> -- size of picon, 100%-10%

-width <width> the width of the picon output, overrides piSize

-piframe <frame-offset-into-file> -- frame to use to make the picon

-piskip <Number of frames to skip between picons> If set, a series of picons will be produced at 'skip' intervals

NOTE: the parameters in [square brackets] are optional.

Net-X-Copy - Metadata Extraction

Net-X-Copy supports our standard range of proxy and broadcast file formats for extracting metadata to XMP XML.

Metadata Extraction Command Line

```
NetXCopy -m -s <sourcefile.r3d>
```

Metadata Extraction To A File

```
NetXCopy -m -s <sourcefile.r3d> -t <metadataout.xmp>
```

Command Line Parameters

```
netxcopy -m -s "M:\t3media\Streams\R3D - Red\Raven 4K\scarletw-standard-5k-24fps\
A106_C037_0118G5_001.R3D"
<x:xmpmeta xmlns:x="adobe:ns:meta/" x:xmpk="XMP Core 5.1.2">
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#">
  <rdf:Description rdf:about="" xmlns:aux="http://ns.adobe.com/exif/1.0/aux/">
    <aux:SerialNumber>130-246-CE5</aux:SerialNumber>
  </rdf:Description>
  <rdf:Description rdf:about="" xmlns:tiff="http://ns.adobe.com/tiff/1.0/">
    <tiff:Model>SCARLET-W</tiff:Model>
  </rdf:Description>
  <rdf:Description rdf:about="" xmlns:xmpMM="http://ns.adobe.com/xap/1.0/mm/">
    <xmpMM:DocumentID>{0ACB8429-67BB-46F6-8555-CFFCE5F0777B}</xmpMM:DocumentID>
    <xmpMM:VersionID>6.1.0.225</xmpMM:VersionID>
  </rdf:Description>
  <rdf:Description rdf:about=""
xmlns:xmpDM="http://ns.adobe.com/xmp/1.0/DynamicMedia/" xmlns:stDim="http://ns.adobe.com/
xap/1.0/sType/Dimensions#">
    <xmpDM:audioSampleRate>48000</xmpDM:audioSampleRate>
    <xmpDM:duration rdf:parseType="Resource">
      <xmpDM:value>872</xmpDM:value>
      <xmpDM:scale>1001/24000</xmpDM:scale>
    </xmpDM:duration>
    <xmpDM:videoFrameSize rdf:parseType="Resource">
```

```

<stDim:unit>pixel</stDim:unit>
<stDim:w>5120</stDim:w>
<stDim:h>2560</stDim:h>
</xmpDM:videoFrameSize>
<xmpDM:startTimecode rdf:parseType="Resource">
  <xmpDM:timeFormat>23976Timecode</xmpDM:timeFormat>
  <xmpDM:timeValue>12:01:17:17 </xmpDM:timeValue>
</xmpDM:startTimecode>
<xmpDM:altTimecode rdf:parseType="Resource">
  <xmpDM:timeFormat>23976Timecode</xmpDM:timeFormat>
  <xmpDM:timeValue>12:01:17:17 </xmpDM:timeValue>
</xmpDM:altTimecode>
<xmpDM:audioChannelType>Stereo</xmpDM:audioChannelType>
<xmpDM:audioSampleType>16Int</xmpDM:audioSampleType>
</rdf:Description>
<rdf:Description rdf:about="" xmlns:dt="http://www.drastictech.com/metadata/elements">
  <dt:File rdf:parseType="Resource">
    <dt:track>
      <rdf:Bag>
        <rdf:li rdf:parseType="Resource">
          <rdf:value/>
          <dt:type>General</dt:type>
          <dt:CompleteName>M:\t3media\Streams\R3D - Red\Raven 4K\scarletw-standard-5k-24fps\
A106_C037_0118G5_001.R3D</dt:CompleteName>
          <dt:Format>Red R3D</dt:Format>
        </rdf:li>
        <rdf:li rdf:parseType="Resource">
          <rdf:value/>
          <dt:type>Video</dt:type>
          <dt:Format>BI RGB</dt:Format>
          <dt:Display_aspect_ratio>16:9</dt:Display_aspect_ratio>
          <dt:Frame_rate>23.976 (24000/1001) FPS</dt:Frame_rate>
          <dt:Width>5 120 pixels</dt:Width>
          <dt:Height>2 560 pixels</dt:Height>
        </rdf:li>
      </rdf:Bag>
    </dt:track>
  </dt:File>
  <dt:FileName>M:\t3media\Streams\R3D - Red\Raven 4K\scarletw-standard-5k-24fps\
A106_C037_0118G5_001.R3D</dt:FileName>
  <dt:DeviceSerialNum>130-246-CE5</dt:DeviceSerialNum>
  <dt:FullName>A106_C037_0118G5_001</dt:FullName>

```

```

<dt:Model>SCARLET-W</dt:Model>
<dt:NativeLocator>M:\t3media\Streams\R3D - Red\Raven 4K\scarletw-standard-5k-24fps\
A106_C037_0118G5_001.R3D</dt:NativeLocator>
<dt>Title>037</dt>Title>
<dt:UniversalLocator>M:\t3media\Streams\R3D - Red\Raven 4K\scarletw-standard-5k-24fps\
A106_C037_0118G5_001.R3D</dt:UniversalLocator>
<dt:VersionString>6.1.0.225</dt:VersionString>
<dt:Planes>1</dt:Planes>
<dt:BitCount>32</dt:BitCount>
<dt:Compression>00000000</dt:Compression>
<dt:CompressionString>BI RGB</dt:CompressionString>
<dt:VideoHandler>00000000</dt:VideoHandler>
<dt:AudioHandler>736F7774</dt:AudioHandler>
<dt:SizeImage>52428800</dt:SizeImage>
<dt:Reserved>32</dt:Reserved>
<dt:Scale>1001</dt:Scale>
<dt:Rate>24000</dt:Rate>
<dt:SuggestedBufferSize>52428800</dt:SuggestedBufferSize>
<dt:SampleSize>0</dt:SampleSize>
<dt:Pitch>20480</dt:Pitch>
<dt:FileType>182</dt:FileType>
<dt:FileTypeString>Red R3D</dt:FileTypeString>
<dt:A-Frame>0</dt:A-Frame>
<dt:AspectRatio>16:9</dt:AspectRatio>
<dt:PosterFrame>0</dt:PosterFrame>
<dt:TimeCode>1866642</dt:TimeCode>
<dt:VITCTimeCode>1866642</dt:VITCTimeCode>
<dt:VersionNumber>60100225</dt:VersionNumber>
<dt:TimeCodeType>1866642</dt:TimeCodeType>
<dt:LTCTimeCodeType>128</dt:LTCTimeCodeType>
<dt:VITCTimeCodeType>128</dt:VITCTimeCodeType>
</rdf:Description>
<rdf:Description rdf:about="" xmlns:dtdev="http://www.drastictech.com/metadata/deviceelements">
<dtdev:DTDeviceMetadataType>RED</dtdev:DTDeviceMetadataType>
<dtdev:anamorphic_mode>0</dtdev:anamorphic_mode>
<dtdev:brightness>0</dtdev:brightness>
<dtdev:camera_acceleration_x>0.094</dtdev:camera_acceleration_x>
<dtdev:camera_acceleration_y>0.094</dtdev:camera_acceleration_y>
<dtdev:camera_acceleration_z>0.956</dtdev:camera_acceleration_z>
<dtdev:camera_firmware_revision>98555</dtdev:camera_firmware_revision>
<dtdev:camera_firmware_version>6.2.34</dtdev:camera_firmware_version>
<dtdev:camera_id>A</dtdev:camera_id>

```


<dtdev:camera_model>SCARLET-W</dtdev:camera_model>
<dtdev:camera_model_id>12</dtdev:camera_model_id>
<dtdev:camera_network_name>S-WEAPON</dtdev:camera_network_name>
<dtdev:camera_pin>130-246-CE5</dtdev:camera_pin>
<dtdev:camera_rotation_x>0</dtdev:camera_rotation_x>
<dtdev:camera_rotation_y>-9.003</dtdev:camera_rotation_y>
<dtdev:camera_rotation_z>0</dtdev:camera_rotation_z>
<dtdev:clip_aspect_ratio>2</dtdev:clip_aspect_ratio>
<dtdev:clip_aspect_ratio_denominator>1</dtdev:clip_aspect_ratio_denominator>
<dtdev:clip_aspect_ratio_numerator>2</dtdev:clip_aspect_ratio_numerator>
<dtdev:clip_default_color_version>2</dtdev:clip_default_color_version>
<dtdev:clip_id>037</dtdev:clip_id>
<dtdev:contrast>0</dtdev:contrast>
<dtdev:digital_gain_blue>1</dtdev:digital_gain_blue>
<dtdev:digital_gain_green>1</dtdev:digital_gain_green>
<dtdev:digital_gain_red>1</dtdev:digital_gain_red>
<dtdev:dropped_frame_count>0</dtdev:dropped_frame_count>
<dtdev:exposure_compensation>0</dtdev:exposure_compensation>
<dtdev:exposure_time>20833.3</dtdev:exposure_time>
<dtdev:flip_horizontal>0</dtdev:flip_horizontal>
<dtdev:flip_vertical>0</dtdev:flip_vertical>
<dtdev:flut_control>0</dtdev:flut_control>
<dtdev:frame_guide_enabled>1</dtdev:frame_guide_enabled>
<dtdev:frame_guide_height>1</dtdev:frame_guide_height>
<dtdev:frame_guide_topleft_x>0</dtdev:frame_guide_topleft_x>
<dtdev:frame_guide_topleft_y>0</dtdev:frame_guide_topleft_y>
<dtdev:frame_guide_width>1</dtdev:frame_guide_width>
<dtdev:framerate>23.976</dtdev:framerate>
<dtdev:framerate_denominator>1001</dtdev:framerate_denominator>
<dtdev:framerate_numerator>24000</dtdev:framerate_numerator>
<dtdev:genlock_setting>0</dtdev:genlock_setting>
<dtdev:gmt_date>20160118</dtdev:gmt_date>
<dtdev:gmt_time>213555</dtdev:gmt_time>
<dtdev:hdr_mode>0</dtdev:hdr_mode>
<dtdev:image_height>2560</dtdev:image_height>
<dtdev:image_width>5120</dtdev:image_width>
<dtdev:iso>1280</dtdev:iso>
<dtdev:iso_calibration_version>1</dtdev:iso_calibration_version>
<dtdev:jamsync_setting>0</dtdev:jamsync_setting>
<dtdev:lens_aperture>49</dtdev:lens_aperture>
<dtdev:lens_aperture_units>0</dtdev:lens_aperture_units>
<dtdev:lens_distance_units>1</dtdev:lens_distance_units>

```
<dtdev:lens_focal_length>24</dtdev:lens_focal_length>
<dtdev:lens_focus_distance>4294967295</dtdev:lens_focus_distance>
<dtdev:lens_mount>Canon</dtdev:lens_mount>
<dtdev:local_date>20160118</dtdev:local_date>
<dtdev:local_time>213555</dtdev:local_time>
<dtdev:media_serial_number>15240FC80DE7</dtdev:media_serial_number>
<dtdev:monitor_sharpness>0</dtdev:monitor_sharpness>
<dtdev:original_filename>A106_C037_0118G5_002.R3D</dtdev:original_filename>
<dtdev:pixel_aspect_ratio>1</dtdev:pixel_aspect_ratio>
<dtdev:record_framerate>23.976</dtdev:record_framerate>
<dtdev:redcode>REDcode 8:1</dtdev:redcode>
<dtdev:reel_id>106</dtdev:reel_id>
<dtdev:reel_id_8_character>A106C037</dtdev:reel_id_8_character>
<dtdev:reel_id_full>A106_C037_0118G5</dtdev:reel_id_full>
<dtdev:resolution_format_name>5K 2:1</dtdev:resolution_format_name>
<dtdev:saturation>1</dtdev:saturation>
<dtdev:sensor_id>9</dtdev:sensor_id>
<dtdev:sensor_name>DRAGON 5K S35</dtdev:sensor_name>
<dtdev:sensor_olpf_interchangeable>1</dtdev:sensor_olpf_interchangeable>
<dtdev:sensor_olpf_name>STANDARD</dtdev:sensor_olpf_name>
<dtdev:shadow>0</dtdev:shadow>
<dtdev:shutter_degrees>180</dtdev:shutter_degrees>
<dtdev:shutter_fractions>48</dtdev:shutter_fractions>
<dtdev:start_absolute_timecode>21:36:16:18</dtdev:start_absolute_timecode>
<dtdev:start_edge_timecode>01:49:54:11</dtdev:start_edge_timecode>
<dtdev:stereo_setup>0</dtdev:stereo_setup>
<dtdev:user_curve_black_x>0</dtdev:user_curve_black_x>
<dtdev:user_curve_black_y>0</dtdev:user_curve_black_y>
<dtdev:user_curve_high_x>0.75</dtdev:user_curve_high_x>
<dtdev:user_curve_high_y>0.75</dtdev:user_curve_high_y>
<dtdev:user_curve_low_x>0.25</dtdev:user_curve_low_x>
<dtdev:user_curve_low_y>0.25</dtdev:user_curve_low_y>
<dtdev:user_curve_mid_x>0.5</dtdev:user_curve_mid_x>
<dtdev:user_curve_mid_y>0.5</dtdev:user_curve_mid_y>
<dtdev:user_curve_white_x>1</dtdev:user_curve_white_x>
<dtdev:user_curve_white_y>1</dtdev:user_curve_white_y>
<dtdev:user_timecode_preference>1</dtdev:user_timecode_preference>
<dtdev:white_balance_kelvin>4800</dtdev:white_balance_kelvin>
<dtdev:white_balance_tint>0</dtdev:white_balance_tint>
</rdf:Description>
</rdf:RDF>
</x:xmpmeta>
```

Configuration

The configuration files/settings are stored in different places for different operating systems:

App Specific Configuration

Windows:

Registry

\HKEY_CURRENT_USER\Software\Drastic\NetXCopy

General Configuration

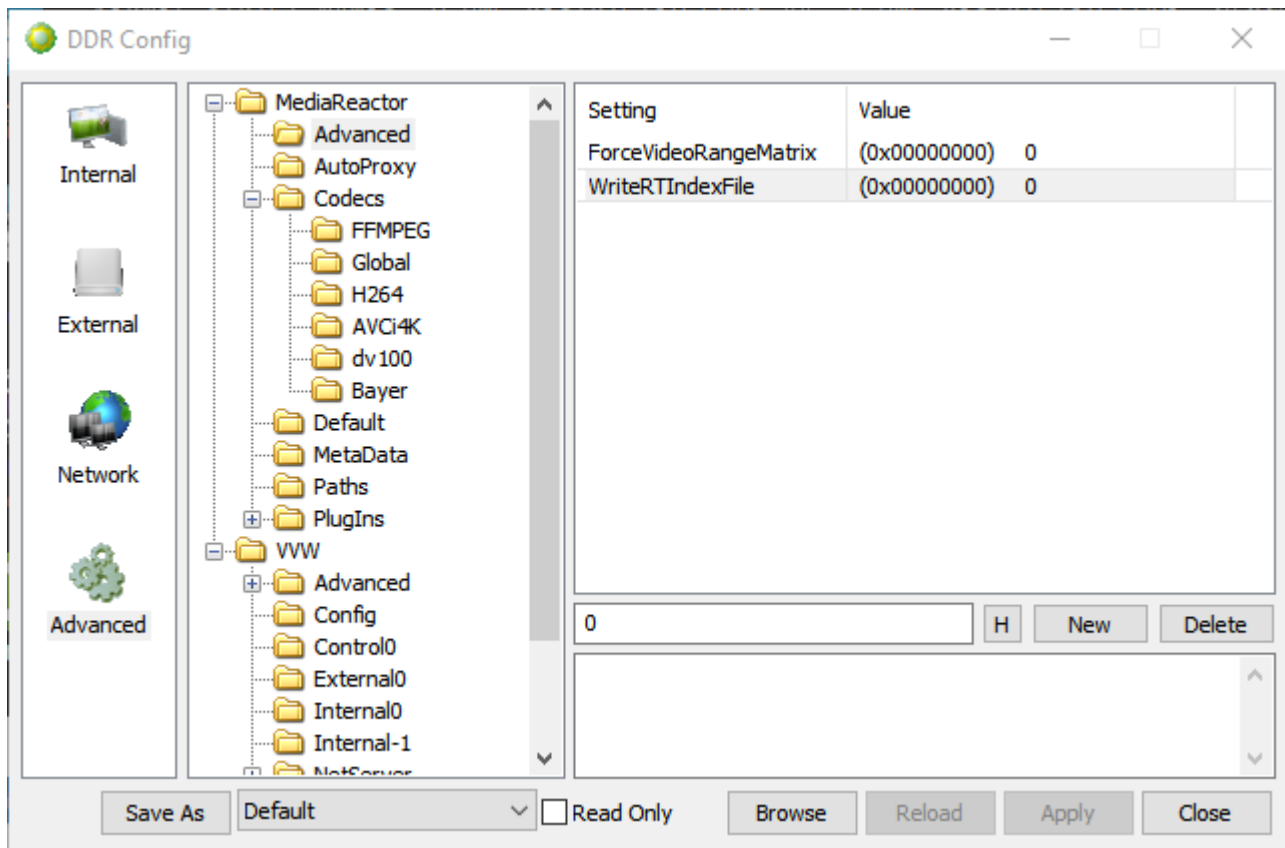
Windows:

C:\ProgramData\Drastic\config.xml

Alt - C:\Documents and Settings\<username>\Drastic\config.xml

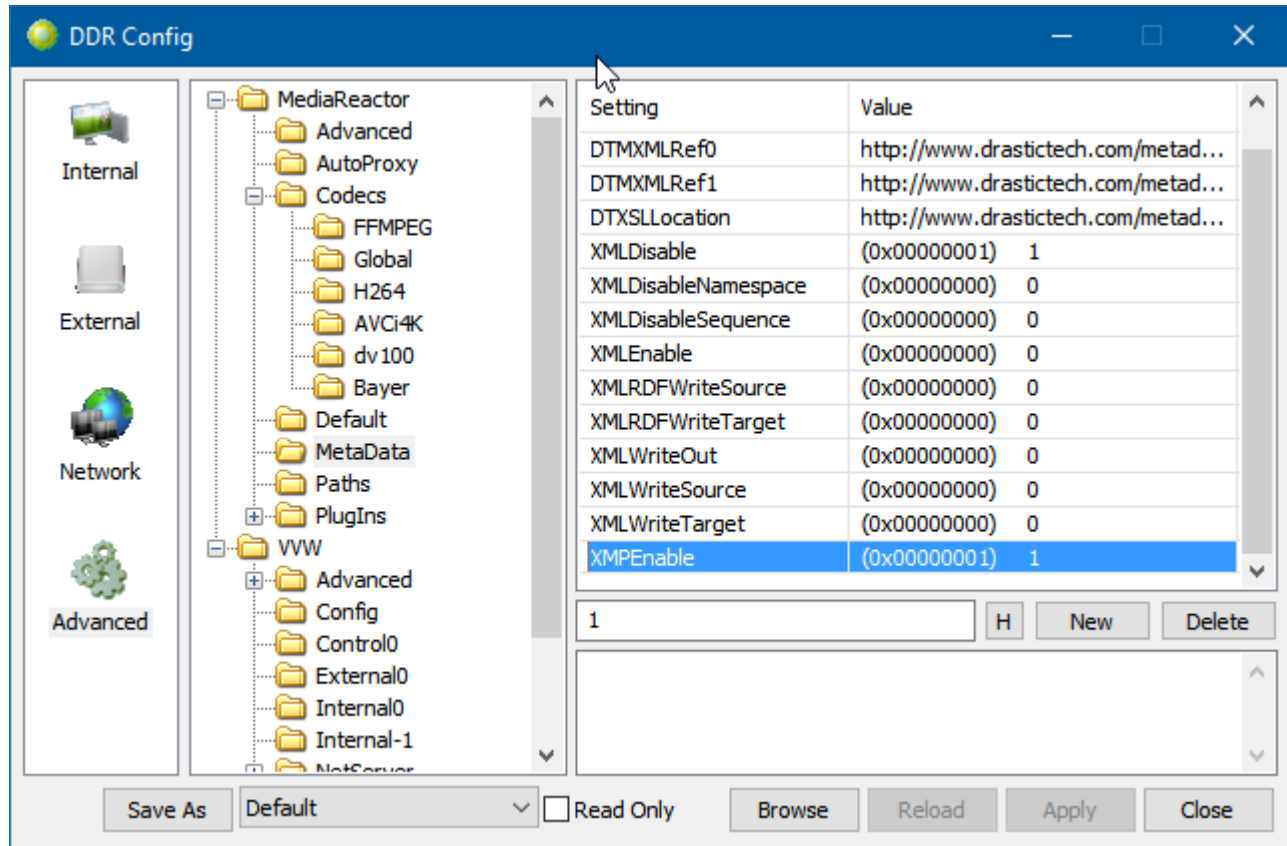
Enable/Disable RTIN File Generation

Use **DDRConfig | Advanced** to change \MediaReactor\Advanced WriteRTIndexFile



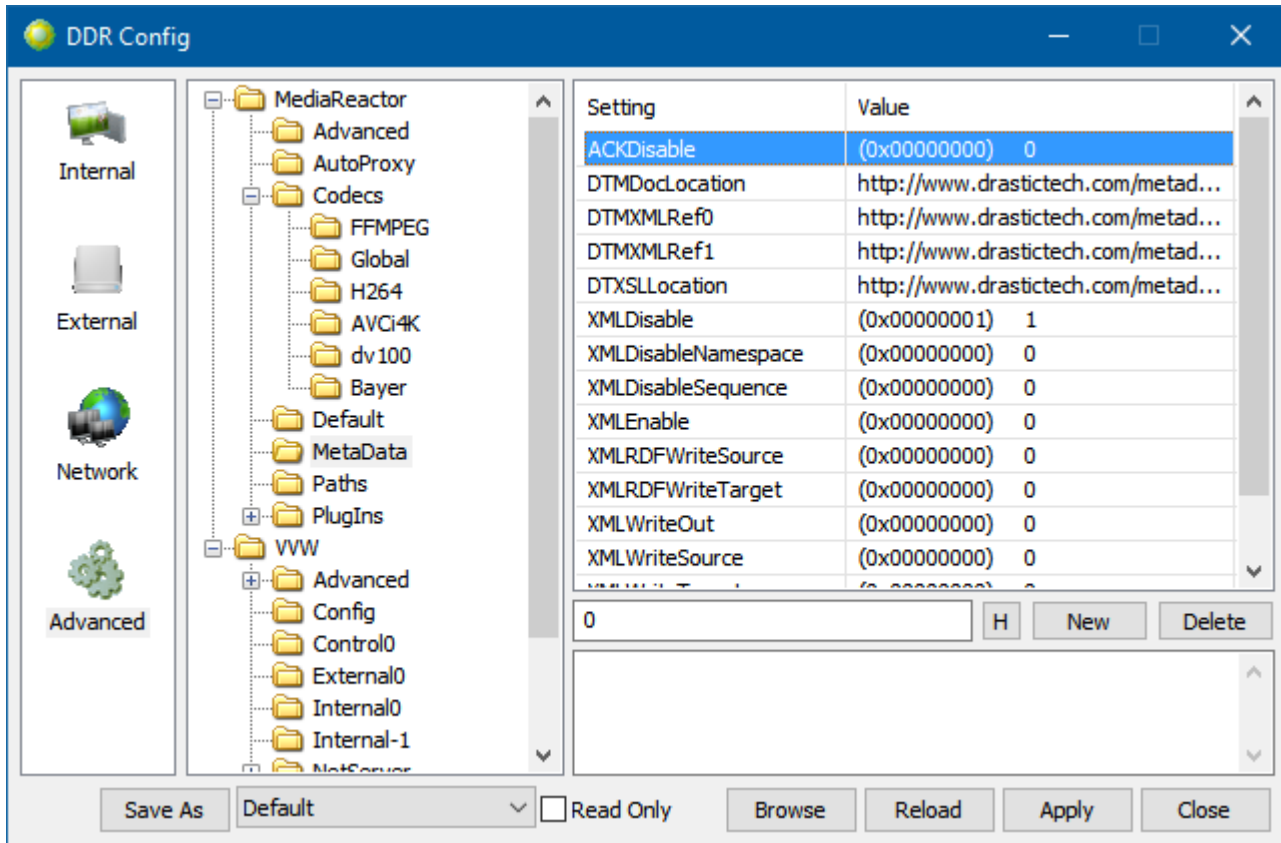
Enable/Disable XMP File Generation

Use DDRConfig | Advanced to change \MediaReactor\Advanced XMPEnable



Enable/Disable ACK Generation

Use DDRConfig | Advanced to change \MediaReactor\Advanced ACKEnable



OAuth 2.0 Configuration

For oauth 2.0 access, the oauth access file should be placed in the same directory as the general configuration (config.xml) file. They should be named with their access identifier (e.g. google cloud would be [www.googleapis.com.oauth](http://www.googleapis.com/oauth)). This file should be security protected so that only the server components can read them. The format of the file is the same as the OAuth 2.0 JSON return:

```
www.googleapis.com.json
{
  "access_token":
  "WRQmiEjibDX3XYrIV4wfKNkg1h70hfnWQZbYibxdkkeyGu4tSbUFIpSBTLsr9ADCy7K_U",
  "token_type": "Bearer",
  "expires_in": 3600,
  "refresh_token": "hpOe0hALfn2RdnS5bSkwr8zL7IACVatZ-A"
}
```

For cloud access, the BASE64 encoded secret and client_id must also be added to the config.xml at /MediaReactor/oauth2/<name of access point> (e.g. /MediaReactor/oauth2/www.googleapis.com)

For more information, see: <http://www.drastic.tv/support-59/supporttipstechnical/273-cloud-api-oauth-2-net-x-code-pfr>

SysLog Output

There is also an optional syslog output for Windows. Please contact support@drastictech.com for more information.

ACK(R) Files

After capturing or converting files, Net-X-Convert generally creates an ACK or ACKR file that contains information on the file's source, video and audio parameters, length, time code, UUID and other metadata information. Internally, it is an XML file. For more information on its format, please see the Net-X-Convert_API manual.

RTIN (real time index) Files

While Net-X-Convert is capturing it will create an RTIN file alongside the actual media file. These files contain metadata for the media files as well as information on the locations of video and audio data

within the media file. This allows Net-X-Player to play the files while they are being captured. They also allow for more efficient access to the files for editing.

MediaReactor Workstation

For more information on editing live, recorded and offline files in Avid, Adobe, Assimilate, Nucoda, Autodesk, QuickTime and other products, please see:

<http://www.mediareactor.ws>

videoQC

For reviewing, checking and clipping live, recorded and offline files from Windows, macOS and Linux, including full waveform, vectorscope, video and audio tools, please see:

<http://www.videoqc.com>

Setting up Cloud (OAuth 2.0) Access for Drastic software

Drastic software supports direct access to cloud resources using http, http2, ftp and other file sharing methods. For cloud providers like Google, an authentication system is also required to access the stored files. All of Drastic's version 6 or greater software supports authenticating via OAuth 2.0 across an https transport. This is most useful for Net-X-Convert's partial file restore system, but can also be used from videoQC or MediaReactor. Accessing these resources requires a second level of setup, beyond the basic software setup, and this article provides an overview on that process.

Cloud file access - Direct

The simplest way to set up access to a cloud is to use a file system redirector (If this is not possible in your scenario, please see the next section of this article). In the case of Google, the easiest way to do this is with their FUSE file system add on. For more information on setting this up, please see:

<https://cloud.google.com/storage/docs/gcs-fuse>

Cloud file access - https

As an example, this section will go over the steps required to set up access to a Google cloud 'bucket' from Drastic software. The steps are operating system independent, other than the directories in which the access files are stored. With the access file, they should be set up to be read only by the Drastic software, as they will contain sensitive information that could be used to access your cloud files. For the purposes of this article, you will need to use one of the following directories:

Windows:

C:\ProgramData\Drastic\

Alt - C:\Documents and Settings\\Drastic\

In order to set up OAuth 2.0, you will need to get information and data from your cloud account. In this case, we will use Google's cloud service as an example.

First you need to authorize and get the application credentials' json. Using the gcloud command from the Google cloud SDK is the easiest way to do this. Run this command on your server:

```
gcloud auth application-default login
```

Alternately, you can create this json file from Google's developer API at:

<https://console.developers.google.com/apis/credentials>

This will let you log into the Google OAuth server, and then save a 'application_default_credentials.json' on you system. It should have data similar to this in it:

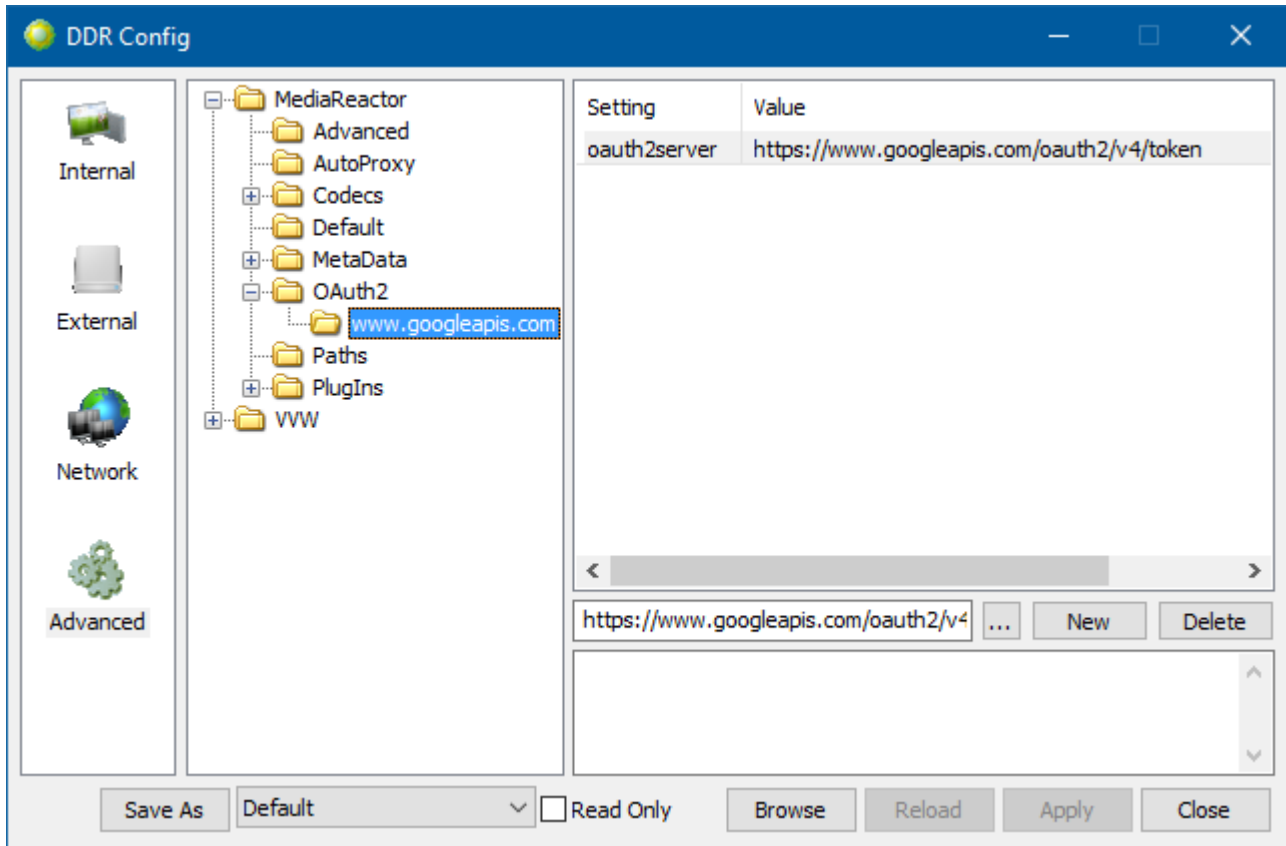
```
{
  "client_id": "dasdsa850-6qr4p6gpi6hnwe654yrtjuq83di341hur.apps.googleusercontent.com",
  "client_secret": "mgfei9jgf19q7MsssTy",
  "refresh_token": "fw98jsduTmScuUjavQzchmf8wssssu5y5f85mAmcvaa",
  "type": "authorized_user"
}
```

This file needs to be copied to the correct directory above, and renamed:

www.googleapis.com.json

Once you have the correct json file, you will also need to specify which OAuth 2.0 authentication server to use. This is done in the config.xml, normally with the DDRConfig utility. For each json file, there should be a matching folder under \MediaReactor\OAuth2\. Within that folder should be an oauth2server entry with the URL of the server you want to use, For Google cloud, this would normally be

\MediaReactor\OAuth2\www.googleapis.com\oauth2server =
"<https://www.googleapis.com/oauth2/v4/token>"



Drastic software will use this config to create and refresh the access as needed so that it can access your OAuth 2.0 protected files. To access them, simply specify them as URLs. For a bitbucket on Google called 'netxcode-pfr' with a file called 'sourceABR.mp4', the file URL to send would look like:

<https://www.googleapis.com/storage/v1/b/netxcode-pfr/o/sourceABR.mp4?alt=media>

The alt=media is recommended but optional in most cases. Not including it will cause a secondary request to be sent, based on the JSON return from google. Other cloud systems' URLs will vary, but the basic structure will be similar to this.

Setting up Amazon S3 AWS Access for Drastic software

Drastic software supports direct access to cloud resources using http, http2, ftp and other file sharing methods. For cloud providers like Amazon, an authentication system is also required to access the stored files. All of Drastic's version 6 or greater software supports authenticating directly with Amazon via `AWSAccessKeyId/SecretKey` through an https transport. This is most useful for Net-X-Code's partial file restore system, but can also be used from videoQC or MediaReactor. Accessing these resources requires a second level of setup, beyond the basic software setup, and this article provides an overview on that process.

Amazon S3 Cloud file access - https

As an example, this section will go over the steps required to set up access to an Amazon S3 Cloud 'bucket' from Drastic software. The steps are operating system independent, other than the directories in which the access files are stored. With the access file, they should be set up to be read only by the Drastic software, as they will contain sensitive information that could be used to access your cloud files. For the purposes of this article, you will need to use the following directory:

Windows:

`C:\ProgramData\Drastic\`

Alt - `C:\Documents and Settings\<<username>\Drastic\`

In order to access Amazon, you will need to generate a `rootkey.csv` with the `AWSAccessKeyId` and `AWSSecretKey`, and save it in the OS specific directory above. The file should look something like this:

```
AWSAccessKeyId=MGIEOWJDSIONGFSUIGNW  
AWSSecretKey=djJFASjfowjgwof8473sdjhHFDJSHFSO
```

Once that file is present, Drastic software will use it whenever accesses to Amazon S3 AWS is attempted. This does mean it will not be able to access public resources when the key is in place. If you need to access public S3 data, then simply rename or delete the `rootkey.csv`.

To generate the key, log into `aws.amazon.com`. Under your username at the top right, select 'My Security Credentials'. On that page, expand the 'Access keys (access key ID and secret access key)'. There you can create new access key(s) and save them to `rootkey.csv` on your server.

Error Returns – Net-X-Copy

- 0 – Success
- 1 – unable to create file (EPERM)
- 2 – no such file or directory (ENOENT).
- 5 – read or write error (EIO)
- 6 – no such device or address (ENXIO)
- 12 – unable to allocate memory (ENOMEM)
- 22 – invalid argument (EINVAL)
- 86 – unable to complete copy or conversion.
- 255 – unable to create index file or unable to index source.
- 256 – unable to acquire information from source file
- 257 – unable to set conversion center information
- 258 – unable to find TS associated with RTIN
- 259 – unable to retrieve frame information from RTIN
- 260 – start position in file greater than end position
- 261 – unable to set target file information
- 261 – DMF get bytes error
- 275 – general timecode error (deprecated)
- 276 – in timecode greater then out timecode
- 277 – tcin before first timecode in file
- 278 – timecode is invalid
- 279 – tcout after last timecode in file
- 290 – in timecode not in file range
- 291 – out timecode not in file range
- 1155 – insufficient permissions to use dmPut

This manual has been compiled to assist the user in their experience using Net-X-Convert software. It is believed to be correct at the time of writing, and every effort has been made to provide accurate and useful information. Any errors that may have crept in are unintentional and will hopefully be purged in a future revision of this document. We welcome your feedback.

Drastic Technologies Ltd
523 The Queensway, Suite 201
Toronto, ON, M8Y 1J7
Canada
P (416) 255 5636
F (416) 255 8780

(c)opyright 2023, Drastic Technologies Ltd. All Rights Reserved.