

Third-Party Component Licenses for EntropyX

Document Version: 1.0

Last Updated: July 9, 2025

Software Version: EntropyX v2.0.799617

Overview

This document provides comprehensive information about third-party software components used by EntropyX, their respective licenses, and compliance requirements. EntropyX integrates with external software to provide enhanced file processing capabilities while maintaining full compliance with all applicable open source and commercial licenses.

Component Categories

Required External Dependencies

These components must be separately installed and licensed by users:

- **FFmpeg** - Media file processing
- **Ghostscript** - PDF optimization and compression
- **Microsoft Word** - DOCX to PDF conversion (Windows only)

Optional Python Libraries

These libraries enhance functionality when available but are not required:

- **cryptography** - Advanced encryption capabilities

Core Runtime

- **Python** - Programming language runtime and standard libraries

1. FFmpeg

1.1 Component Information

- **Purpose:** Audio and video file compression and conversion
- **Usage in EntropyX:** Media compression features for audio/video files
- **Version Requirements:** Any recent version with basic encoding support
- **Distribution:** Not distributed with EntropyX - must be installed separately by users

1.2 License Information

- **Primary License:** GNU Lesser General Public License (LGPL) v2.1
- **Alternative License:** GNU General Public License (GPL) v2.0 or later
- **Copyright:** FFmpeg developers and contributors

1.3 Usage Details

How EntropyX Uses FFmpeg:

- External process execution for media file compression
- Command-line interface interaction only
- No direct linking or code integration
- User-controlled installation and licensing

FFmpeg Integration:

- Detection of installed FFmpeg executable
- Subprocess calls with validated parameters
- Independent process execution with timeout protection
- No modification or redistribution of FFmpeg code

1.4 License Compliance

EntropyX Compliance Measures:

- **No Distribution:** FFmpeg not distributed with EntropyX
- **User Responsibility:** Users must obtain FFmpeg through official channels
- **No Modification:** EntropyX does not modify FFmpeg source code
- **Process Separation:** FFmpeg runs as independent external process
- **License Respect:** Users responsible for FFmpeg license compliance

User Obligations:

- Download FFmpeg from official sources (<https://ffmpeg.org/>)
- Comply with LGPL v2.1 or GPL v2.0 license terms
- Ensure proper attribution if redistributing FFmpeg

- Understand any additional obligations under chosen license

1.5 Official License Reference

Full License Text: <https://www.gnu.org/licenses/lgpl-2.1.html>

FFmpeg License Information: <https://ffmpeg.org/legal.html>

2. Ghostscript

2.1 Component Information

- **Purpose:** PDF file optimization and compression
- **Usage in EntropyX:** PDF compression and optimization features
- **Version Requirements:** Any version supporting pdfwrite device
- **Distribution:** Not distributed with EntropyX - must be installed separately by users

2.2 License Information

- **License:** GNU Affero General Public License (AGPL) v3.0
- **Commercial License:** Available from Artifex Software for commercial use
- **Copyright:** Artifex Software Inc. and contributors

2.3 Usage Details

How EntropyX Uses Ghostscript:

- External process execution for PDF optimization
- Command-line interface interaction only
- No direct linking or code integration
- User-controlled installation and licensing

Ghostscript Integration:

- Detection of installed Ghostscript executable (gswin64c, gswin32c, gs)
- Subprocess calls with predefined optimization parameters
- Independent process execution with timeout protection
- No modification or redistribution of Ghostscript code

2.4 License Compliance

EntropyX Compliance Measures:

- **No Distribution:** Ghostscript not distributed with EntropyX
- **User Responsibility:** Users must obtain Ghostscript through official channels
- **No Modification:** EntropyX does not modify Ghostscript source code
- **Process Separation:** Ghostscript runs as independent external process
- **License Respect:** Users responsible for Ghostscript license compliance

User Obligations:

- Download Ghostscript from official sources (<https://www.ghostscript.com/>)
- Comply with AGPL v3.0 license terms for non-commercial use
- Consider commercial license for commercial deployment scenarios
- Understand copyleft obligations under AGPL v3.0
- Ensure proper source code availability if AGPL obligations apply

Important AGPL v3.0 Considerations:

- AGPL requires source code availability for network-accessible services
- Commercial organizations should evaluate license compatibility
- Artifex Software offers commercial licenses to avoid AGPL obligations

2.5 Official License Reference

AGPL v3.0 License: <https://www.gnu.org/licenses/agpl-3.0.html>

Ghostscript License Information: <https://www.ghostscript.com/license.html>

Commercial Licensing: <https://www.artifex.com/>

3. Microsoft Word

3.1 Component Information

- **Purpose:** DOCX to PDF document conversion
- **Usage in EntropyX:** Document format conversion feature (Windows only)

- **Version Requirements:** Microsoft Word (any recent version with COM automation support)
- **Distribution:** Not distributed with EntropyX - requires separate Microsoft Office license

3.2 License Information

- **License:** Microsoft Software License Terms for Microsoft Office
- **Type:** Commercial proprietary software license
- **Copyright:** Microsoft Corporation

3.3 Usage Details

How EntropyX Uses Microsoft Word:

- COM (Component Object Model) automation interface
- PowerShell script execution for document conversion
- No direct code integration or linking
- Requires valid Microsoft Office installation and license

Word Integration:

- Detection of installed Microsoft Word application
- COM automation through PowerShell scripting
- Document conversion using Word's built-in export functionality
- No modification or redistribution of Microsoft software

3.4 License Compliance

EntropyX Compliance Measures:

- **No Distribution:** Microsoft Word not distributed with EntropyX
- **User License Required:** Users must have valid Microsoft Office license
- **No Modification:** EntropyX does not modify Microsoft Word software
- **API Usage Only:** Uses only documented COM automation interfaces
- **License Respect:** Users responsible for Microsoft Office license compliance

User Obligations:

- Obtain valid Microsoft Office license through authorized channels
- Comply with Microsoft Software License Terms
- Ensure proper licensing for number of users and deployment scenarios
- Understand restrictions on automation and server usage in enterprise environments

3.5 Official License Reference

Microsoft Office Licensing: <https://www.microsoft.com/licensing/>

Software License Terms: Included with Microsoft Office installation

4. Python Runtime and Standard Libraries

4.1 Component Information

- **Purpose:** Core runtime environment and standard functionality
- **Usage in EntropyX:** Primary programming language and standard operations
- **Version Requirements:** Python 3.7 or later
- **Distribution:** May be bundled with EntropyX executable builds

4.2 License Information

- **License:** Python Software Foundation License (PSF License)
- **Type:** Compatible with GPL, BSD-style license
- **Copyright:** Python Software Foundation

4.3 Standard Library Components Used

Core Modules:

- **os, sys** - Operating system and system-specific functionality
- **json** - JSON data format processing
- **hashlib** - Cryptographic hash functions (SHA-256)
- **zlib** - Data compression algorithms
- **logging** - Audit trail and diagnostic logging
- **threading, multiprocessing** - Concurrent processing support

- **tkinter** - Graphical user interface framework
- **tempfile** - Temporary file and directory management
- **datetime** - Date and time processing
- **uuid** - Unique identifier generation
- **re** - Regular expression pattern matching
- **subprocess** - External process execution

4.4 License Compliance

PSF License Characteristics:

- **GPL Compatible:** Can be combined with GPL-licensed software
- **Permissive License:** Allows commercial use, modification, and distribution
- **Attribution Required:** Copyright notice and license text must be preserved
- **No Copyleft:** No requirement to license derivative works under same terms

EntropyX Compliance:

- Full compliance with PSF License terms
- Appropriate attribution in software documentation
- License text preservation in distributed software
- No modification of Python standard library components

4.5 Official License Reference

PSF License: <https://docs.python.org/3/license.html>

Python Licensing Information: <https://www.python.org/psf/license/>

5. Cryptography Library (Optional)

5.1 Component Information

- **Purpose:** Advanced encryption capabilities using Fernet symmetric encryption
- **Usage in EntropyX:** Enhanced file encryption when available
- **Version Requirements:** cryptography 3.0 or later

- **Distribution:** Optional dependency - enhanced functionality when available

5.2 License Information

- **License:** Apache License 2.0 and BSD 3-Clause License
- **Type:** Permissive open source licenses
- **Copyright:** Individual contributors and Python Cryptographic Authority

5.3 Usage Details

How EntropyX Uses Cryptography:

- Optional import with fallback encryption implementation
- Fernet symmetric encryption for file content protection
- AES-256 encryption with cryptographic authentication
- Secure key generation and management

Integration Approach:

- Graceful degradation when library not available
- Fallback to custom encryption implementation
- No modification of cryptography library source code
- Standard API usage following library documentation

5.4 License Compliance

Apache License 2.0 Compliance:

- **Permissive License:** Allows commercial use, modification, and distribution
- **Attribution Required:** Copyright notices and license text must be preserved
- **Patent Grant:** Includes explicit patent grant from contributors
- **No Copyleft:** No requirement to license derivative works under same terms

EntropyX Compliance:

- Full compliance with Apache License 2.0 terms
- Appropriate attribution in software documentation
- License text preservation when library is distributed

- No modification of cryptography library source code

5.5 Official License Reference

Apache License 2.0: <https://www.apache.org/licenses/LICENSE-2.0>






Cryptography Library: <https://cryptography.io/>

Project License Information: <https://github.com/pyca/cryptography/blob/main/LICENSE>

6. License Compatibility and Compliance Summary




6.1 Overall License Compatibility

EntropyX License Compatibility Matrix:

- **Python (PSF):**  Compatible - Permissive license allows commercial use
- **Cryptography (Apache 2.0):**  Compatible - Permissive license allows integration
- **FFmpeg (LGPL):**  Compatible - External process, no direct linking
- **Ghostscript (AGPL):**  External dependency - Users must ensure compliance
- **Microsoft Word:**  Commercial license - Users must have valid Office license

6.2 Distribution Compliance

Components Distributed with EntropyX:

- Python runtime (PSF License) -  Fully compliant
- Python standard libraries (PSF License) -  Fully compliant
- Cryptography library (Apache 2.0) -  Fully compliant when included

Components NOT Distributed with EntropyX:

- FFmpeg - User must install and license separately
- Ghostscript - User must install and license separately
- Microsoft Word - User must license separately

6.3 User Responsibilities

For Enterprise Deployment:

1. **Obtain Valid Licenses:** Ensure all required software is properly licensed

2. **AGPL Compliance:** Understand Ghostscript AGPL obligations for network use
3. **Commercial Evaluation:** Consider commercial Ghostscript license for enterprise use
4. **License Compatibility:** Verify license compatibility with organizational policies
5. **Attribution Requirements:** Include required attribution and license notices

6.4 Compliance Verification

Recommended Steps:

- Review all component licenses with legal counsel
- Verify proper licensing for number of users and deployment scope
- Ensure compliance with any copyleft obligations (AGPL)
- Maintain documentation of all third-party component licenses
- Monitor for license changes in future component updates

7. Additional Legal Information

7.1 Disclaimer

This document provides information about third-party component licenses for informational purposes. It does not constitute legal advice. Organizations should consult with qualified legal counsel to ensure compliance with all applicable license terms and obligations.

7.2 Updates and Changes

- This document will be updated when component versions or licenses change
- Users are responsible for monitoring license compliance as components are updated
- EntropyX will make reasonable efforts to notify users of significant license changes

7.3 Contact Information

License Questions: entropyxcompression@gmail.com

Legal Inquiries: entropyxcompression@gmail.com

For specific questions about third-party component licensing, users should contact the respective component maintainers directly.

This document ensures transparency and legal compliance regarding all third-party software components used by or integrated with EntropyX.

Document Classification: Public

Last Updated: July 9, 2025

© 2025 EntropyX. All rights reserved.