

Xerox[®] FreeFlow[®] Core Release Notes

Software Version 6.1.2

© 2021 Xerox Corporation. All rights reserved. Xerox®, FreeFlow®, VIPP®, Nuvera®, Iridesse™, iGen®, Brenva™, Baltoro™, CiPress®, Impika® and Trivor™ are trademarks of Xerox Corporation in the United States and/or other countries. BR14937

Adobe, the Adobe logo, the Adobe PDF logo, PDF Converter SDK and PDF Library are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Other company trademarks are also acknowledged.

While every care has been taken in the preparation of this material, no liability will be accepted by Xerox Corporation arising out of any inaccuracies or omissions.

Changes are periodically made to this document. Changes, technical inaccuracies, and typographical errors will be corrected in subsequent editions.

Document Version: 1.1 (June 2021).

Preface

Welcome to the Xerox® FreeFlow® Core and FreeFlow Core Cloud Release Notes. This document contains important information regarding system requirements, new features and enhancements, known issues and limitations, and supported printers for the current software release.

Unless otherwise noted, the information contained herein applies to both the FreeFlow Core on-premise and FreeFlow Core Cloud configurations.

Contents

1. System Requirements	1-1
Minimum System Specifications	1-1
FreeFlow Core.....	1-1
FreeFlow Core Cloud Clients	1-3
Security Updates	1-4
2. New Features and Changes	2-1
Version 6.1.1	2-1
Email Notification	2-1
Redeeming/Licensing Multiple Activation Keys	2-1
JDF 1.6 Compliance.....	2-1
Support for Select Canon® Monochrome Sheetfed Digital Presses	2-1
Version 6.1	2-2
Improved Error Handling	2-2
Job Processing Performance	2-2
List Navigation.....	2-2
Assign Workflows and Printers to Specific Users	2-2
User-Specific Jobs View	2-2
Globally Rename Presets	2-2
Specify UTC Offset	2-2
Predefined Imposition Layouts.....	2-2
Support for Larger PDF Page Sizes and Page Offsets	2-2
Automatically Round Up Decimal Values	2-3
Optimize Preflight Settings.....	2-3
Split by Bookmark	2-3
External Component Variables	2-3
User Access to Advanced Application Configuration Settings.....	2-3
Authenticated Connections via a Proxy Server.....	2-3
JDF/JMF Enhancements.....	2-3
Version 6.0	2-4
User Account Access	2-4
Job Approval Workflow	2-4
Printer Groups	2-4

Pass Through Job Submission	2-4
Job Submission with Release Date	2-4
LPR Printer Support (On Premise only).....	2-4
Single Sign-On (SSO).....	2-5
SFTP and HTTPS Locations for File System Operations/MAX	2-5
Job Characteristics Based on One Dimension	2-5
New Process Variable for TimeStamp	2-5
Preflight Process Plans	2-5
Preserve PDF/VT Record Boundaries Upon Split	2-5
InfoMark Code.....	2-5
CLI Job Submission (On Premise only).....	2-5
FreeFlow Core Reports.....	2-5
FreeFlow Core Exchange	2-6
Greater Accessibility for Cloud Configurations	2-6
JDF/JMF in the Cloud	2-6
Authenticated Connections via a Proxy Server.....	2-6
3. Resolved Issues	3-1
Version 6.1.2.....	3-1
Version 6.1.1.....	3-1
Version 6.1.....	3-1
Version 6.0.3.....	3-1
Version 6.0.2.....	3-2
Version 6.0.1.....	3-2
Version 6.0.....	3-2
4. Known Issues and Limitations	4-1
Known Issues.....	4-1
Installation and Upgrade	4-1
System	4-2
Job Management	4-2
Printer Management.....	4-3
Components, Workflows and Presets	4-6
FreeFlow Core Exchange	4-6
FreeFlow Core Configure.....	4-6
FreeFlow Core Cloud	4-7
5. Supported Printers.....	5-8

Xerox Devices	5-8
Non-Xerox Devices	5-11
6. Installation Procedures	6-1
Installation and Upgrades	6-1
Upgrading to FreeFlow Core 6.n.n.....	6-1
Easy Start Workflows	6-3
Secure JMF	6-3
Secure Printing.....	6-3
Saving a JDF Ticket to a Remote File System	6-4
FreeFlow Core Cloud Print and FreeFlow Core Submit	6-4
Backup and Restore.....	6-4
Online Resources.....	6-4
7. Third Party License Disclosures	7-1

1. System Requirements

Minimum System Specifications

FreeFlow Core

FreeFlow® Core is supported on standalone platforms that meet (or exceed) the system requirements defined below.

Installation of FreeFlow Core is supported on private local or wide area Ethernet networks (Intranet) only. Connectivity over the public Internet is available/offered in conjunction with Xerox Cloud Services only.

It is the responsibility of the Customer to provide, install and configure a standalone PC/server with an appropriately licensed version of the Operating System prior to installing the software. See the Xerox FreeFlow Core Installation Guide for more information.

FreeFlow Core cannot be installed on Domain controllers or backup Domain controllers.

Performance Guidelines

FreeFlow Core includes a service that automatically monitors critical resources and provides both email notifications and a warning in the User Interface when memory, disk space and/or database table space become constrained. These warnings are not only informational but identify conditions that will prevent reliable operation of the system.

If these errors appear, upgrade the FreeFlow Core server with additional resources (e.g., system memory and hard disk space).

*The Basic configuration is suitable for performing basic workflow operations only or for evaluating the software. For all other environments, a system that meets or exceeds the High-Performance specifications should be obtained.

	Basic*	High-Performance
Processor	Intel Core i7 Processor, 3.3 GHz or better	Intel Xeon Processor E5, 2.5 GHz or better (4 or more Cores)
System Memory	8 GB	16 GB
Hard Drive Minimum of 25% free space available at all times. Windows disk volumes larger than 2 TB are not supported.	500 GB SATA Hard Disk Drive (HDD) (single disk partition)	500 GB, SATA Solid State Drive (SSD), 3Gbps (RAID 5) Full system backups are required if non-RAID configurations are used.

Peripherals	<ul style="list-style-type: none"> • Monitor and Video Controller with at least 1280 x 1024, 1900 x 1200 (recommended) resolution and 32-bit color • Keyboard and mouse 	
Network	Permanent connection with a fixed (static) IP address	
Intranet	100Mbps	1Gbps
<p>Operating System</p> <p>Windows Basic, Core, Education, Home, IoT Core, Mobile, Starter, Team, "S", "X", and Preview editions of Microsoft Operating Systems are not supported. Prior to using multi-point server, small business server, or Essentials editions check with product support as some releases are not supported.</p> <p>To achieve optimal performance, choose the 'High Performance' power plan from the Power Options Control Panel.</p>	<ul style="list-style-type: none"> • Microsoft Windows 10 (64 bit) <p>Windows 10 should always be maintained at the current supported software level.</p>	<ul style="list-style-type: none"> • Microsoft Windows Server 2019 • Microsoft Windows Server 2016
Infrastructure	<ul style="list-style-type: none"> • Microsoft .NET Framework 3.5 SP1 must be enabled for some versions of SQL Server. Consult the Microsoft SQL Server documentation for more information. • Microsoft .NET Framework 4.8. • Microsoft SQL Server 2014 SP1 or higher. Enterprise, Express, and Standard editions are supported. <p>FreeFlow Core may be configured with a remote SQL database. See the Installation Guide for more information.</p> <p>The server should be configured with a static IP address. DHCP is not recommended.</p> <p>FreeFlow Core supports Single Sign-on (SSO) from customer Active Directory accounts only. Federated login from third party accounts such as Facebook, Google, Apple, etc. is not supported.</p> <p>Do not use cloud based or federated logon accounts such as Windows Live, Microsoft, Outlook or Office 360 for the server or SQL server. The server must use either a Windows local or Active Directory account.</p>	

Web Browser	<ul style="list-style-type: none"> • Current versions of modern browsers from Apple®, Google®, Microsoft® and Mozilla® <p>Microsoft Internet Explorer and the original Microsoft Edge are not supported. Only Microsoft Chromium Edge is supported.</p> <p>Browsers older than one year are not supported. To avoid compatibility issues, always use the latest version of the browser.</p> <p>Always use desktop computer browsers. Mobile device browsers may exhibit display issues.</p>
Optional Software	<ul style="list-style-type: none"> • Microsoft Office 2016 (64 bit), Office 2019 (64-bit) or Office 365 (64-bit) (if conversion of native file formats to PDF is required) • Adobe Acrobat Reader (to open and view PDF files within the browser window) • Adobe Acrobat Pro DC or Callas pdfToolbox version 12.0.553 (to create custom preflight profiles)

Virtual Environment Support

When installing the software in a virtual environment, it is the Customers' responsibility to support the virtual environment and virtual environment software itself. Customers must also provide a fully configured virtual environment, including access and support thereof to Xerox support, as necessary.

Only issues that can be reproduced on the standard FreeFlow product configuration will be supported. For problems unique to the virtual environment itself, Xerox will make best effort to fix.

FreeFlow Core Cloud Clients

Accessing the cloud service is supported on platforms that meet or exceed the system requirements defined below.

It is the responsibility of the Customer to provide, install and configure the client PC (local system) with an appropriately licensed version of the Operating System prior to accessing the cloud service.

	Requirements for Client PCs
Processor	Intel Xeon Processor E5, 2.5 GHz or better
System Memory	8 GB
Hard Drive	10 GB of available free disk space
Peripherals	<ul style="list-style-type: none"> • Monitor and Video Controller with at least 1280 x 1024 (minimum) / 1900 x 1200 (recommended) resolution and 32-bit color • Keyboard and mouse
Network	Permanent connection with a fixed (static) IP address
Intranet	100Mbps

Software Components	<ul style="list-style-type: none"> • FreeFlow Core Cloud Print client • FreeFlow Core Submit client
<p>Operating System</p> <p>Windows Basic, Core, Education, Home, IoT Core, Mobile, Starter, Team, "S", "X", and Preview editions of Microsoft Operating Systems are not supported. Prior to using multi-point server, small business server, or Essentials editions check with product support as some releases are not supported.</p>	<ul style="list-style-type: none"> • Microsoft Windows 10 (64 bit) • Microsoft Windows Server 2019 • Microsoft Windows Server 2016 <p>Window 10 should always be maintained at the current supported software level.</p>
Infrastructure	<ul style="list-style-type: none"> • Microsoft .NET Framework 4.8.
Web Browser	<ul style="list-style-type: none"> • Current versions of modern browsers from Apple®, Google®, Microsoft® and Mozilla® <p>Microsoft Internet Explorer and the original Microsoft Edge are not supported. Only Microsoft Chromium Edge is supported.</p> <p>Browsers older than one year are not supported. To avoid compatibility issues, always use the latest version of the browser.</p> <p>Always use desktop computer browsers. Mobile device browsers may exhibit display issues.</p>
Optional Software	<ul style="list-style-type: none"> • Microsoft Office 2016 (64 bit), Office 2019 (64-bit) or Office 365 (64-bit) (if conversion of native file formats to PDF is required) • Adobe Acrobat Reader (to open and view PDF files within the browser window)

Security Updates

Xerox recommends that all software products installed on the FreeFlow Core server and clients be kept up to date using Windows Update in order to obtain the latest fixes and security improvements.

See the Xerox FreeFlow Security Guide for more information. This document may be obtained from the Xerox Security website at: <https://security.business.xerox.com/>

2. New Features and Changes

Version 6.1.1

Email Notification

- FreeFlow Core now supports the option to use a Gmail account in addition to a customer SMTP account for sending Email notifications.

The preconfigured Xerox Email account is no longer supported. If you are using the Xerox account, you must change the account to a Gmail or customer SMTP account under Email Notification Setup. FreeFlow Core Cloud supports a customer SMTP account only.

Redeeming/Licensing Multiple Activation Keys

- When obtaining a License during the initial installation process, or when using the Core License Tool, it is now possible to redeem multiple software Activation Keys when the product configuration includes additional optional modules. Previously, redeeming additional Activation Keys required a multi-step process.

JDF 1.6 Compliance

- FreeFlow Core is compliant with JDF 1.6, including updated JMF command support for signals such as AbortQueueEntry, RemoveQueueEntry and ResumeQueueEntry.

Support for Select Canon® Monochrome Sheetfed Digital Presses

- Limited support for select Canon Monochrome Sheetfed Digital Presses with PRISMAsync Print Server.

See [Known Issues and Limitations and Supported Printers](#) for important information regarding capabilities and supported printer model(s).

- To add a Canon Printer Destination in Printer Management and Status:
 1. Specify the IP Address of the PRISMAsync Print Server and append Port Number 8010 to the IP Address [IP Address:8010].
 2. For the Queue Name, select the 'Automated Workflow Name' or 'Printer Default' Print Queue defined on the Canon PRISMAsync Print Server.
- To register a Canon printer for LPR Job Submission:
 1. Enter the DNS Name or IP Address.
 2. For Queue Name, enter 'Canon Automated Workflow name' or 'default'.
 3. Set Printer File to 'PDF' and Job Ticket to 'None'. When the job is sent to 'Automated Workflow,' the job attributes will be set to attribute values defined in the automated workflow.

To enable limited Job Ticketing with Canon devices, the 'Canon Printer Capability' file must be loaded when configuring the Printer Destination. See [Non-Xerox Printers under Known Issues and Limitations](#) for more information.

Job attributes are limited to Job Name only when submitting jobs to Canon devices via LPR.

Version 6.1

Improved Error Handling

- Improved Application error handling upon system startup—clearer response and recovery messages.

Job Processing Performance

- Job processing performance has been improved when leveraging multiprocessing systems (up to 12 Cores).

List Navigation

- Support for “Jump-to-Item” in scrolling lists, tables and dropdown boxes. To jump straight to an item in a list, begin typing the first character of the item.

Assign Workflows and Printers to Specific Users

- Administrators can now assign specific Workflows and Printers to individual Users (Administration > User Access Settings > Add/Edit User > Workflow/Printers Mapping). Only Workflows and/or Printers assigned to a given User(s) will be visible to that User(s).

User-Specific Jobs View

- To display a list of jobs associated with the current User, select the My Jobs view on the Job Management and Status Tab.

Globally Rename Presets

- Globally rename (Edit) Presets from the Preset List or when editing a Workflow. Changes made to the Preset name will be applied globally, across all Workflows where the Preset is used.

Specify UTC Offset

- Define the Coordinated Universal Time (UTC) offset for Components that include time settings. The default offset value corresponds to the time zone of the Browser.

Predefined Imposition Layouts

- Eight new preconfigured Imposition Presets based on the following commonly used layouts: 3-Fold Booklet, Eighth Fold, Half Fold, Quarter Fold, Cross Fold Booklet, Formal Greeting Card, Reverse Sheet Order Simplex, Reverse Sheet Order Duplex.

Support for Larger PDF Page Sizes and Page Offsets

- The maximum allowable dimensions for PDF pages has been increased to 9,999”x 9,999” for Components that support page dimensions.
- Horizontal and Vertical Offset controls now support up to a maximum of 9,999” for Components that support offset values.

Automatically Round Up Decimal Values

- Components that support Process Number Variables include a Round Up option that automatically rounds up values that contain decimals to the nearest integer. If the Round Up option is not selected, decimals values will be truncated.

Optimize Preflight Settings

- New Optimize Component preflight settings for PDFs and Images:
 - Convert Fonts to Outlines
 - Fix potential font problems
 - Mirror Bleed when No Bleed
 - Pixel Replication Bleed when No Bleed
 - Convert specified Spot Color to Specified CMYK color
 - Convert specified CMYK Color to new CMYK color

Split by Bookmark

- The Split Component now supports the option to split a PDF job by Bookmark according to a variety of user-selectable operators including Ignore, Any, Equals/Not Equal To, Contains/Does Not Contain, Starts/Ends With.

External Component Variables

- FreeFlow Core Variables can be passed to External Systems using a specified script, with updated values returned to, and appended to the job in FreeFlow Core. To view the list of Variables when configuring the External Component, select the Include Additional Variables checkbox, then the Search icon.

User Access to Advanced Application Configuration Settings

- Change or reset default values for certain advanced User configuration settings directly from the Customer Override tab in the Core Configure utility—eliminating the need to modify system configuration settings/files.

Users unfamiliar with these settings should consult with Support before making changes.

Authenticated Connections via a Proxy Server

- FreeFlow Core Submit now supports an Authenticated Connection to FreeFlow Core Cloud through a Proxy Server.

JDF/JMF Enhancements

- New and enhanced JDF/JMF capabilities and commands to help streamline integration. See the latest update to the FreeFlow Core SDK for details (available post-launch).

Version 6.0

User Account Access

- The new **Security** section under the Administration Tab allows Administrators to configure and manage various Account Access settings including account passwords, account lockout, account log out, and account activity. See the Xerox FreeFlow Core Security Guide for more information.

Security settings are retained when FreeFlow Core Exchange is used to export/import data to another server.

Job Approval Workflow

- The new **Review** Component allows users to automatically pause jobs and send them to a recipient(s) via Email as part of workflow, including a preflight report, low- or high-res preview. Upon approval, the job can be released in the Job Management Window.

This feature requires the Advanced Prepress optional module or Cloud Advanced.

Printer Groups

- **Printer Groups** represent the aggregation of Printer Destinations into a defined group. When selected in the Job Submit Dialogue or a Print Component, jobs are automatically distributed across the Printer Destinations within the group according to the defined distribution method (round robin, first available or completion time).

This feature requires the requires the Output Management optional module.

Pass Through Job Submission

- The **Pass Through** option in the Submit Job Dialogue bypasses all job processing— sending jobs to a selected Printer Destination unaltered, in their native file format. Pass Through can be used with Printer Groups to load balance jobs across multiple Printer Destinations.

This feature requires the requires the Output Management optional module.

Job Submission with Release Date

- The **Submit Job in a Held State** option in the Submit Job Dialogue makes it possible to schedule job processing. Jobs will not process until the job is manually released in the Job Management Window or the specified release date/time occurs.

This feature requires the requires the Output Management optional module.

LPR Printer Support (On Premise only)

- It's now possible to submit jobs to LPR (Line Printer Remote Protocol) devices when the device is enabled as part of a Printer Destination. Retrieval of LPR device capabilities and Job Ticketing options are not supported for LPR devices.

Single Sign-On (SSO)

- In addition to local login and Active Directory using a Windows Account, FreeFlow Core now supports login via Single Sign-On (SSO) using only Active Directory.

SFTP and HTTPS Locations for File System Operations/MAX

- HTTPS and SFTP paths now be used to specify the location for file system operations accessed by FreeFlow Core. These paths can also be used with Manifest Automation from Xerox (MAX) to reference the location of files for processing.

Job Characteristics Based on One Dimension

- The Job Characteristic for Dimension now supports the selection of 'Any,' making it possible to specify only a single dimension when evaluating the characteristics of a job

New Process Variable for TimeStamp

- The **\$\$FFtimeStamp\$\$** variable may be used to display a date/time stamp when used in conjunction with certain components such as Watermark. This is a system timestamp that takes the desired format depending on the system configuration.

Preflight Process Plans

- The **Preflight Using Process Plan** option in the Preflight Component enables the ability to execute multiple Adobe Acrobat or Callas pdfToolbox preflight profiles when combined into a single process plan.

Preserve PDF/VT Record Boundaries Upon Split

- The **Maintain Sub Job Order** option in the Split Component ensures that the sub job order produced by the Split Component is preserved throughout the workflow – for example, when splitting a PDF/VT job based on record boundaries.

InfoMark Code

- Support for the InfoMark code has been added to the Barcode Component. The InfoMark code is an alternative to the more complex QR Code format, supporting a simple 4-digit printed code.

CLI Job Submission (On Premise only)

- Submit jobs to FreeFlow Core for processing via Command Line Interface (CLI) scripts, including the ability to specify select Job Attributes.

FreeFlow Core Reports

- FreeFlow Core Reports enables the exporting of job data from FreeFlow Core. The same configuration settings available via the Xerox FreeFlow Core Reports desktop application (On Premise version) can now be accessed directly in the FreeFlow Core and Core Cloud User Interface.

FreeFlow Core Reports supports both job and printer data. The data available for export in FreeFlow Core Cloud is limited to job data only.

FreeFlow Core Exchange

- FreeFlow Core Exchange enables the importing and exporting of FreeFlow Core configuration data such as User Settings, Hot Folders, Presets, Workflows and Printer Destinations. The same configuration settings available via the desktop application (On Premise version) can now be accessed directly in the FreeFlow Core and Core Cloud User Interface.

Greater Accessibility for Cloud Configurations

- FreeFlow Core Cloud now supports the following additional capabilities depending on the configuration:

Cloud Base

- Hot Folders
- Save

FreeFlow Core Cloud Hot Folders do not support the submission of Microsoft Office native file types. To submit a Microsoft Office file type to FreeFlow Core Cloud Hot Folders, use the FreeFlow Core Submit Microsoft Office add-in to convert the file to PDF first.

- FreeFlow Core Reports
- FreeFlow Core Exchange

Cloud Advanced – all of the features above, plus:

- Manifest Automation from Xerox (MAX)

When specifying the location (URI) of the job file in a manifest, the file path must be the specific file share (network drive) assigned to the customer cloud account by Xerox.

- Route using JMF and MAX variables

Certain Job Characteristics, such as Route by Printer Destination status, are not supported in the cloud.

JDF/JMF in the Cloud

- FreeFlow Core Cloud now supports integration with select external workflows systems via JDF/JMF, enabling the submission of JDF instructions directly to FreeFlow Core Cloud workflows.

FreeFlow Core Cloud supports inbound requests from select JMF clients only. Bi-directional status (i.e., job and printer information) is not supported.

Authenticated Connections via a Proxy Server

- FreeFlow Core Cloud Print now supports an Authenticated Connection to FreeFlow Core Cloud through a Proxy Server.

3. Resolved Issues

Version 6.1.2

- Fixed issue with jobs intermittently being held and had to be manually released to continue processing and complete in the workflow
- Fixed FreeFlow Core performance issue seen when Core Reports is enabled
- Fixed vertical alignment issue with watermark text when the rotation is set for 180 degrees
- Fixed issue with the hot folder default source file location not being retained if an FTP path is used
- Fixed issue with not being able to manage a hot folder when the hot folder name contains special characters
- Fixed issue seen when multiple users simultaneously submit jobs
- Fixed issue seen with the FreeFlow Core Configure entry "DatabaseCommandTimeout"
- Fixed security issue with MS Active Directory

Version 6.1.1

- Fixed issue where FreeFlow Core would sometimes remain in a processing state
- Fixed job status issue seen with Job Group
- Fixed issue with VIPP files having TXT or CSV extensions building up error logs in the FreeFlow Core hot folders
- Fixed issue with same-named presets can be created if copied, however it cannot be exported
- Fixed issue with the In-app license updater
- Fixed issue with Custom JMF submission failing after upgrade

Version 6.1

- Fixed UI performance issue when using the Edit Workflow page with a workflow that has many Route components
- Fixed DB Admin access issue
- Fixed issue with incorrect page defaults displayed when using non-English language version
- Fixed issue where "Internal Server Error" would occur when editing workflows after upgrading to 6.0.x
- Fixed issue with Split node after upgrading to 6.0.x
- Fixed issue where FreeFlow Core process variables are not supported when specifying the save file location in the Save Component

Version 6.0.3

- Fixed issue when setting maxSimulJobs in MantisServer.exe.config file

- Fixed issue with gutter tab intermittently showing Inches instead of mm
- Fixed issue with uStore job failing with ReturnCode="121"
- Fixed issue with convertSpdCommandsToBookmarks key not working
- Fixed issue with not being able to retrieve printer information from AltaLink C8035

Version 6.0.2

- Fixed “not-enough-memory” error after upgrading from FF Core 5.4.5 to 6.0.0
- Fixed issue with not being able to update the names in the routing rules
- Fixed issue with jobs arriving at the DFE with a name of the last sub-job
- Fixed issue with workflows contains external PDF resources intermittently failing with "An error has occurred on the server"
- Fixed issue causing errors when editing the Watermark node
- Fixed issue where some Characters do not display when the GUI is in German
- Fixed issue where new custom paper size shows as "Zoll" (German for Inches) on a metric system

Version 6.0.1

- Fixed orientation issue when using the Optimize Node
- Fixed EULA issue when regional settings are set to certain languages
- Fixed Imposition issue seen after upgrading to FFC 5.4.4
- Fixed performance degradation issue
- Fixed issue where Collect Node would intermittently not release jobs
- Fixed issue where not all files were removed after deleting completed jobs
- Fixed “Error opening input file” issue when DBF files were submitted in Zip format
- Fixed issue where the import/export of Watermark Preset would change the syntax of a substring variable
- Fixed issue with Split Node causing blank pages in the PDF output
- Fixed issue with not being able to save printer queue settings

Version 6.0

- Only one Administrator can be logged in to FreeFlow Core at any given time. If the Administrator session is ended by logging out of FreeFlow Core or closing the Browser, a (different) Administrator can log in within 1 minute.
- FreeFlow Core no longer requires Windows Service Accounts to have Administrator privileges.
- Fixed issue with TrimBox size changing after being processed by the Optimized Preset.
- Fixed issue where Optimize would remove objects outside the TrimBox.
- Fixed issue where Optimize would remove content within the CropBox when programmed to removed content outside of the CropBox.
- Fixed issue where some characters would be resized when processed by the Optimize node.
Fixed issue where Optimize with [Remove invisible image data] would leave temp folders behind.

- Fixed issue where Optimize, when "Remove Objects Completely Outside of" is selected using Trim Box, the clear ink layer was removed.
- Fixed issue that prevented FreeFlow Core Cloud Print Client to be configured to work with customer's proxy server(s).
- Fixed issue that was allowing the Save node to be configured with a process variable location
- Fixed issue where the Finishing options for the Xerox Baltoro HF Inkjet Press would not stay selected in the FreeFlow Core job ticket.
- Fixed issue where outward pressmarks that were center aligned for the top, bottom, left or right for the artbox, trimbox and bleedbox were not appearing in the output.
- Fixed issue when sending an XGF to FreeFlow Core will not convert the umlauts in bookmarks correctly.

4. Known Issues and Limitations

Known Issues

Installation and Upgrade

While checking Roles & Features during the installation process, the Installer repeatedly prompts the user to reboot the system instead of continuing the installation process. This problem occurs if Windows 10's Print Management utility is missing due to various reasons associated with Windows Update and/or upgrading from Windows Home to Pro Edition. To resolve the problem, repair Windows using one of the methods (solution number 2 is recommended) outlined in the following bulletin before attempting the installation again: <https://windowsreport.com/windows-10-print-management-missing/>

During the Installation process, you may be prompted to reboot the system once, or multiple times depending on the configuration of the system. If the Installer does not automatically restart following the system reboot, **wait several minutes** for the Operating System to fully initialize, then double-click the Installer to continue the installation process.

If the software version and build number is hard to read when viewing the About screen after an upgrade from a previous release, select *control + shift + R* while viewing the About screen. This will reload the resources for that page.

Location of data upon upgrade and reinstall

When upgrading or reinstalling FreeFlow Core, it is not possible to change the "Product Installation" and "Store Users workflow data in ..." locations.

Uninstalling and Retaining FreeFlow Core Configuration Information

When uninstalling, if you choose to retain the FreeFlow Core Configuration information, you must reinstall with the same version for the data to be restored correctly. If you install a different version, the data will not be restored properly.

Compressed Windows Drive for Databases

FreeFlow Core and Microsoft SQL Server are not supported on compressed volumes.

Windows Server Naming

Depending upon how security is configured, changing the name of a Windows Server that is used to host an SQL Database Server could result in breaking database access. Before renaming the SQL Database Server host or FreeFlow Core server when using a local SQL Database Server, please consult the Microsoft SQL Server documentation for instruction on how to rename the server and update the SQL Database server and account names.

Login delay

Upon initial start-up of FreeFlow Core after a reboot, Windows needs to initialize all necessary FreeFlow Core required components. Therefore, it can take a few minutes before the login dialog appears.

Windows Server 2019

When starting the installer, if the %TEMP% folder for Remote Desktop access is missing the Installation will fail. To overcome this, recreate the temp folder.

System

Administrator Login

When creating a new Administrator for the first time, if the user quickly selects the Create button more than once, the User Interface will redirect the user to the FreeFlow Core login screen rather than the End User License Agreement (EULA) acknowledgement screen. After logging back in as a new Administrator, the user will be redirected to the EULA screen as expected.

Email Notification Using TLS

Under Email Notification Setup on the Administration Tab, the checkbox Use SSL under SMTP Settings should appear as 'Use TLS'.

Job Management

Large Jobs

When submitting jobs larger than 1GB, there is no guarantee that the jobs will complete successfully.

Large Files Using Native Windows Compression

Windows native compression uses 2 different compression formats, "Deflate" for files smaller than 2GB and "Deflate64" for files larger than 2GB. FreeFlow Core only supports "Deflate" and "GZip" compressions so files compressed with "Deflate64" cannot be processed.

So FFC does support native Windows compression provided they are small enough to be compressed with "Deflate".

Large MAX Jobs

Processing a large MAX file will take longer than processing multiple MAX files with the same number of sub jobs. As a result, submission of smaller MAX files is recommended.

Unsupported TIFF Formats

The following TIFF features are not supported: JPEG compression, YCbCr, and color space. In addition, TIFF transparencies are flattened during conversion.

Remote ZIP files

Zips files stored on remote servers are not supported.

PDF Compliance

The settings of a selected PDF/X standard may not be retained after processing the job through a FreeFlow Core workflow.

JDF Job Tickets

JDF tickets submitted to FreeFlow Core must be 'Combined DigitalPrinting' only (e.g., JDF/@Type="Combined", JDF/@Types contains "DigitalPrinting").

Drag and Drop Submission from Mac

Drag and drop submission from Mac is not supported. To submit a job from a Mac client, use the Browser button to upload the files.

Collect Job Documents

If Collect Job Documents is selected as an option for a Save or Finish Component, all the sub jobs are submitted correctly to the save location or finisher. However, only one entry appears in the FreeFlow Core Job Status window.

Microsoft Office File Conversion

If Microsoft Excel files fail to convert in FreeFlow Core, check the following settings:

1. Run the Windows service as a user with permissions for Excel. Windows services generally run using the local account, which are not typically configured to open Excel.
2. Open FreeFlow Core Configure and change the service account to an account with permission to open Excel.

[Do not change service accounts directly. Always use FreeFlow Core Configure.](#)

3. Excel expects certain folders in the system. Typically, a Desktop folder is necessary in the systemprofile folder to open Excel files.
 - a. For 32-bit (x86), create this folder:
C:\Windows\System32\config\systemprofile\Desktop
 - b. For 64-bit (x64), create this folder:
C:\Windows\SysWOW64\config\systemprofile\Desktop

[Set the 32-bit folder preferences \(detailed above\) in addition to the 64-bit preferences on 64-bit systems running 64-bit versions of Microsoft Office.](#)

4. Change the DCOMConfig settings for Excel:
 - a. Select [Start > dcomcnfg.exe > Console Root > Component Services > My Computer > DCOM Config].

[You may be prompted for Administrator credentials.](#)

- b. Select "Microsoft Excel Application". If Microsoft Excel Application does not appear in the DCOM list, find the equivalent key [00020812-0000-0000-C000-000000000046] in the DCOM list.
 - c. Right-click 'Properties.'
 - d. Select the Identity tab. Select 'Interactive User.'
 - e. Select the Security Tab. Customize "Launch and Activation Permissions". Edit and add permissions to the user who is running the Windows service.
 - f. Customize "Access Permissions". Edit and add permissions to the user who is running the windows service.
5. Restart the FreeFlow Core service.

Printer Management

Printer Queue Setup

If a Printer Queue is named IPP it will not display in FreeFlow Core. To avoid this issue, do not use IPP as the queue name.

Unsupported Printer Queue Names

If a printer queue name is not supported by FreeFlow Core such as one with a space, it will not be listed in FreeFlow Core when the printer is polled.

Printing Jobs

When printing a job, if an error is encountered at the printer as a result of incorrect stock orientation, the job will print if the width and height are swapped.

Job Submission Regulation

Job Submission Regulation assumes the spool directory of the printer is on the largest drive of the printer. If the spool directory is not on the largest drive, job submission regulation will not process properly. When setting up a printer, please ensure the largest volume is used for the spool.

Deleting a Printer

To delete a printer, you must delete the Printer Destination. To delete the Printer Destination, open the Printer Preset in Workflow Builder and select the Delete button to delete the Printer Destination. Once the Printer Destination is removed, the printer will no longer appear in Printer Management.

Printer Management and Printer Locale

In Printer Management, information retrieved from the printer may be in a language different from the FreeFlow Core system. The specific language is not communicated to FreeFlow Core and the text may not be translated properly.

AltaLink Printers

Printer information may not be available for certain versions of the AltaLink controller.

Non-Xerox Printers

Each Printer Destination represents a connection to a specific Print Queue on the Controller and a set of job ticket defaults. Not all Print Queues and Job Ticket defaults are discoverable by FreeFlow Core.

Print Queues

- The following Fiery Print Queues are supported:
 - Default (configured as hold, print, print and hold, process and hold) and custom queues (Virtual Printer)
- The following Canon Print Queues are supported (via JDF or LPR):
 - Automated Workflow Name
 - Printer Default (configured as “default”)

[Canon devices are not supported in FreeFlow Core Cloud.](#)

Job Properties

- To enable limited Job Ticketing with Canon devices, the ‘Canon Printer Capability’ file must be loaded using the Add Additional Printer Capabilities option (Printer Management and Status > Printers > Edit a Printer) when configuring the Printer Destination. To add the file, select the “JDF Settings” button in the Edit a Printer window, then select the Add Additional Printer Capabilities checkbox. From the Add Additional Printer Capabilities Open File dialogue, select “master.xpaf”, then OK to load the file. Select Save to close the Edit a Printer window
- With the capability file loaded, the following Job Ticket Defaults (Setup Tab) are enabled on Canon devices:
 - Job Name
 - Copies
 - Main Stock

[Media settings at the Canon device may need to be updated for the proper media selection after the job is sent from FreeFlow Core.](#)

- Sides-Imaged
- Collation (uncollated is visible using the Job Ticket Editor. The collated option is supported using the provided job ticket, e.g., XPIF Job Ticket associated with PDF file or JDF job ticket)
- Output Order
- Output Location
- The following Job Ticket Defaults (Setup Tab) are not supported on Non-Xerox printers:

- Color (Canon devices)
- Slip Sheets
- Offset
- Leading Banner Page
- Sender

- Finishing (Canon devices)
- Exceptions (Canon devices)
- Inserts (Canon devices)

When adding or editing a Non-Xerox Printer Destination in the Printer Management and Status Tab, certain capabilities including Job Submission Regulation and Job Ticket Verification may be disabled depending on the capabilities of the Printer Destination.

[In FreeFlow Core Cloud, disable the Printer Retrieves the File for Printing option from the Edit a Printer window on the Printer Management and Status Tab.](#)

The nomenclature and operation of equivalent FreeFlow Core Printer Job Commands (Release, Hold, Cancel) in Job Management and Status may differ on Non-Xerox Printers. These capabilities are not supported for Canon devices.

- To Suspend a job from FreeFlow Core when it is processing at the Fiery Controller, select Hold from Printer Job Commands. To Resume the job, select Release.
- It is possible to cancel a job that is Held at the Fiery Controller but remains visible in the FreeFlow Core job listing. If a job is cancelled from FreeFlow Core when it is suspended or printing at the Fiery Controller, the job will abort and be deleted from the Fiery Controller.

In Printer Management and Status, Printer Status and Consumables may report Not available for this printer. These capabilities are not supported in FreeFlow Core Cloud.

In Job Management and Status, job status at the printer is limited to Job ID for FreeFlow Core Cloud.

The options to Distribute Jobs Between Printer Destinations and Send Jobs to Printer Destinations Based on Job Characteristics in the Print Component, as well as, assigning job property conditions based on Printer Destination Status in workflow components that support Job Characteristics are not supported in FreeFlow Core Cloud.

The Color Split component is not supported.

The Quantity specified in FreeFlow Core will always override the value for Copies defined in the Print Queue. If Quantity is not specified in FreeFlow Core, the quantity will be set to one (1) by default when the job arrives at the Controller even if a different value for Copies has been defined.

Enabling Number of Uncompleted Jobs at the Printer as part of Job Submission Regulation may not reflect the actual state of Uncompleted Jobs and Time Required at the Controller. This capability is not supported for printers associated with a Printer Destination configured as LPR.

Jobs that specify fold finishing should be submitted to the default Print Queue on the Fiery Controller. Submitting jobs to a Virtual Printer may produce unexpected results.

After a job completes printing, the status of the job at the printer may change from Printed to Error (Unable to Close Job). Enabling port 4004 (incoming) through Windows firewall may resolve the issue. This applies to Fiery devices for Printer Destinations configured for JDF. For Canon devices, after the job is sent to the printer, the status of the job at the printer will be “Sent to Printer”.

The performance of the system may be impacted when submitting several large jobs to non-Xerox printers (registered using port 8010) simultaneously. Adding additional RAM to the system and/or reducing the number of large jobs submitted concurrently may improve performance.

Components, Workflows and Presets

Job Processing

All jobs should be processed in the workflows before restarting FreeFlow Core. If jobs are still being processed after a restart, the jobs will abort.

Saving Jobs

FreeFlow Core process variables are not supported when specifying the save file location in the Save Component.

When specifying a save location using an absolute path in the Save Component, only one directory level is supported below the predefined "Save Destination" directory.

Easy Start Workflows

After installing the Easy Start Workflows and Presets, reset the 'Print' and 'Print with Leading Banner Page' Presets to a valid Printer Destination(s). The Easy Start Print Presets configured at install are not valid Printer Destinations (IP Addresses).

Acrobat vs. FreeFlow Core Preflight

FreeFlow Core Preflight can execute both Acrobat and Callas pdfToolbox preflight profiles. Acrobat preflight may result in behavior that is different than FreeFlow Core. Acrobat preflight uses a different version of pdfToolbox than is being utilized by FreeFlow Core. In addition, Acrobat preflight uses a different color conversion engine compared to pdfToolbox.

Preflight Language Based on FreeFlow Core Server

The messages displayed by the preflight report are displayed in the OS language set at the FreeFlow Core server. They are not based on the language set from the client browser.

FreeFlow Core Exchange

Workflow Missing from Workflow List after using Core Exchange to Import a Clone

Prior to importing a clone using FreeFlow Core Exchange, log out of FreeFlow Core and close the browser. Once the import is complete, open the browser and log back into FreeFlow Core. If the browser wasn't closed prior to the import, log out of FreeFlow Core – close, then reopen the browser and log back into FreeFlow Core.

Reboot May Be Required After Importing File

After importing a file using FreeFlow Core Exchange, a reboot maybe required for FreeFlow Core to start up correctly. This is especially true if you are importing a file that is a clone.

FreeFlow Core Configure

Customer Override

The Tooltip for the key name "ExpiredJobSweepInterval" states the value is an interval in seconds. The interval represents milliseconds.

FreeFlow Core Cloud

Hot Folders

FreeFlow Core Cloud Hot Folders do not support the submission of Microsoft Office native file types. To submit a Microsoft Office file type to FreeFlow Core Cloud Hot Folders, use the FreeFlow Core Submit Microsoft Office add-in to convert the file to PDF first.

FreeFlow Core Submit

If you experience issues submitting Microsoft Office files using the FreeFlow Core Submit Microsoft Office add-in, close the Microsoft Office file, then open the standalone FreeFlow Core Submit utility and submit the file.

After adding a Printer Destination in Printer Management and Status, the printer may not appear immediately. Select the green Refresh button in the top right corner of the Printer list or select the Job Management and Status tab or the Workflow Setup tab, and then go back to the Printer Management and Status tab to update the display.

FreeFlow Core Cloud Print Client

When adding a printer using the FreeFlow Core Cloud Print client, there may be a delay before it appears in the FreeFlow Core printer drop down menu. To minimize the delay, select the green Refresh button in the top right corner of the Printer list in the Printer Management and Status tab after adding a printer in the FreeFlow Core Cloud Print client.

Forwarding print jobs to an EFI printer will take longer than to a Xerox FreeFlow Print Server printer.

Route using JMF and MAX variables

Certain Job Characteristics, such as Route by Printer Destination status, are not supported in the cloud.

FreeFlow Core Reports

The data available for export in FreeFlow Core Cloud is limited to job data only.

JDF/JMF

FreeFlow Core Cloud supports inbound requests from select JMF clients only. Bi-directional status (i.e., job and printer information) is not supported.

5. Supported Printers

Xerox Devices

FreeFlow Core supports job submission to Internet Printing Protocol (IPP)-based Printer Destinations including FreeFlow Print Server, FreeFlow Print Server Integrated, Xerox Integrated Color Server, Xerox Integrated copy/print server, EFI Print Server and Integrated Fiery Print Server running supported versions of software, enabling retrieval of supported device capabilities.

To the extent that a particular device publishes certain capabilities via IPP such as copy count, media type, sides-imaged, output location, etc., FreeFlow Core will retrieve that information and use it to populate the printer description, the list of queues and the job ticketing options for that device. If a particular device does not publish certain attributes, they will not be available in FreeFlow Core but may still be programed at the device.

[A device may publish Perfect Binding capabilities; however, these capabilities are not supported by FreeFlow Core.](#)

The following protocols must be enabled on the Controller:

- **IPP Printing** – enables retrieval of supported job ticketing and print submission.
- **SNMP** – enables device type discovery and limited printer status information via the Standard Device Description.

Printer	Controller and Minimum Supported Version
Xerox AltaLink® B8045/B8055/B8065/B8075/B8090	Standard controller
Xerox AltaLink C8030/8035/8045/8055/8070	Standard controller
	Xerox EX-c C8000 Print Server, powered by Fiery
Xerox PrimeLink® B9100 Series Printer	Xerox Integrated Server
	Xerox EX B9100 Series Print Server powered by Fiery
Xerox D136 Copier Printer	Xerox EX136 Print Server 1.0, powered by Fiery
	Xerox FreeFlow Print server 9.0
	Xerox Integrated copy/print server 1.0
Xerox D95A/D110/D125 Copier/Printer	Xerox EX Print Server 1.0, powered by Fiery
	Xerox FreeFlow Print Server 9.0
	Xerox Integrated copy/print server 1.0
Xerox Nuvera® 1xx/200/288/314	Xerox FreeFlow Print Server 7.0 SP3 (CP.73.C3.x) and higher

Xerox PrimeLink C9065/C9070 Printer	Xerox Integrated Color Server
	Limited support for printer capabilities and device attributes.
	Xerox EX 9065-70 Print Server, powered by Fiery
	Xerox EX-i 9065-70 Print Server, powered by Fiery
Xerox Color C60/C70 Printer	Xerox EX-c 9065-70 Print Server, powered by Fiery
	Xerox EX/EX-i C60/C70 Print Server 1.0, powered by Fiery
	Xerox Integrated Color Server
Xerox Color C75 Press	Xerox FreeFlow Print Server Integrated 2.0 SP1 (CP.20.1.15187.0 or higher)
	Xerox EX Print Server 1.0, powered by Fiery
	Xerox Integrated Fiery Color Server 1.0
Xerox Color J75 Press	Xerox FreeFlow Print Server 9.0 SP3
	Xerox EX Print Server 1.0, powered by Fiery
	Xerox FreeFlow Print Server 9.0 SP3
Xerox Color 560/570 Printer	Xerox EX Print Server 1.0/2.0, powered by Fiery
	Xerox FreeFlow Print Server 9.0 SP3
	Xerox Integrated Fiery Color Server 1.0 (System 10)
	Xerox Integrated Color Server
Xerox Versant® 4100 Press	Support limited to copy count, main stock, sides-imaged, collation, sender and output location. Orientation and limited finishing options. Other attributes are not returned by the controller and not accessible by FreeFlow Core.
	Xerox EX-P 4100 Print Server 1.0
Xerox Versant 3100 Press	Xerox EX 4100 Print Server 1.0
	Xerox EX/EX-P 3100 Print Server 1.0 and higher
Xerox Versant 2100 Press	Xerox FreeFlow Print Server 9.0 SP3
	Xerox EX/EX-P 2100 Print Server 1.0 and higher
Xerox Versant 280 Press	Xerox FreeFlow Print Server 9.0 SP3
	Xerox EX 280 Print Server 1.3
	Xerox EX-i 280 Print Server 1.3

Xerox Versant 180 Press	Xerox EX/EX-i 180 Print Server 1.0 and higher
	Xerox FreeFlow Print Server 9.0 SP3
Xerox Versant 80 Press	Xerox EX/EX-i 80Print Server 1.0 and higher
	Xerox FreeFlow® Print Server 9.0 SP3
Xerox DocuColor® 8080 Digital Press	Xerox FreeFlow Print Server 7.0 SP3 (CP.73.C3.x and higher)
Xerox Iridesse™ Production Press	Xerox EX-P 6 Print Server 1.0 and higher
Xerox Color 800i/1000i Press	Xerox EX-P 1000i Print Server 3.0/3.1, powered by Fiery
	Xerox FreeFlow Print Server 9.0 SP3
Xerox Color 800i/1000i Press	Xerox EX Print Server 2.2 (System 10)
	Xerox FreeFlow Print Server 9.0 SP1
Xerox iGen® 5 150 Press	Xerox EX-P 5 Print Server, powered by Fiery
	Xerox FreeFlow Print Server 21 (CP.21.0.15141.0) and higher
Xerox iGen 5 90/120 Press	Xerox EX Print Server 1.1, powered by Fiery
	Xerox FreeFlow Print Server 21 (CP.21.0.15219.0) and higher
Xerox iGen 150 Press	Xerox EX Print Server 1.0, powered by Fiery
	Xerox FreeFlow Print Server 9.0 SP1
Xerox Color 8250 Production Printer	Xerox FreeFlow Print Server 9.0 SP3
Xerox iGen4™ (90/100/220 Perfecting) and Diamond Edition	Xerox EX Print Server 1.0, powered by Fiery
	Xerox FreeFlow Print Server 9.0 SP1
Xerox Rialto® 900 MP Inkjet Press	Xerox Impika PDF Controller Support limited to printer Hot Folder submission only.
Xerox Baltoro™ HF Inkjet Press	Xerox FreeFlow Print Server 24 (CP.24.0.19119.0) and higher
Xerox Brenva™ HD Production Inkjet Press	Xerox FreeFlow Print Server 22
Xerox Trivor™ 2400 Inkjet Press	Xerox IJ Print Server 1.0, powered by Fiery
	AlphaStream Controller Support limited to printer Hot Folder submission only.

Xerox Impika® Compact/Reference/ Evolution	Xerox IJ Print Server, powered by Fiery
	Xerox FreeFlow Print Server 9.0 SP3 Job Ticketing support limited to Copy Count only. Other attributes returned from Xerox® FreeFlow® Print Server are not supported.
Xerox CiPress® 325/CiPress 500	Xerox FreeFlow Print Server 9.0 SP3 Job Ticketing support limited to Copy Count. Other attributes returned from Xerox® FreeFlow® Print Server are not supported.

Non-Xerox Devices

FreeFlow Core supports job submission to EFI Fiery, JDF-enabled Printer Destinations running supported versions of software, enabling JDF device (uni- or bi-directional, depending on the device) connectivity between FreeFlow Core via Job Messaging Format (JMF) and the non-Xerox device.

To the extent that FreeFlow Core supports, and a particular device publishes certain capabilities via JDF, FreeFlow Core will retrieve that information and use it to populate the printer description, the supported queues (“Virtual Printer”) and job ticketing options for that device. If FreeFlow Core does not support and/or a particular device does not publish certain queues or attributes, they will not be available in FreeFlow Core but may still be programed at the device. Other limitations may apply. See Known Issues and Limitations for more information.

The table below represents the list of non-Xerox printers that have been tested and validated by Xerox. Issues with non-Xerox printers that are directly related to FreeFlow Core that can be validated on a reference configuration will be addressed via standard support. Xerox will provide ‘best-effort’ support only for non-Xerox printers that do not appear below. Xerox is not responsible for resolving issues that are unrelated to FreeFlow Core, or otherwise involve engaging the vendors of non-Xerox printers.

The following protocols must be enabled on the Fiery Controller:

- **Fiery JDF** – enables bi-directional JDF device connectivity between FreeFlow Core and the Fiery Controller.

Fiery JDF may require the purchase of a Productivity Package license on certain Fiery Controllers. For more information, please consult <https://www.efi.com/fjdf>

- **SNMP** – enables device type discovery and limited printer status information via the Standard Device Description.

Printer	Controller and Minimum Supported Version
Canon® varioPRINT 6000 TITAN Series Sheetfed Digital Presses	Canon PRISMAsync Print Server version R7.3 or higher LPD, JMF Support must be enabled on the Print Server.

Canon varioPRINT 140 Series Monochrome Sheetfed Digital Presses	Canon PRISMAsync Print Server version 7.2 or higher LPD, JMF Support must be enabled on the Print Server.
Canon imagePRESS C10000 Color Sheetfed Digital Presses	Canon PRISMAsync Print Server version 6.1.3 or higher LPD, JMF Support must be enabled on the Print Server.
Konica-Minolta® AccurioPress C3070 Digital Production Press	EFI Fiery Image Controller IC-417 version 2.1 Requires Fiery Productivity Package IC-417.
Konica-Minolta AccurioPrint C3070L Digital Press	EFI Fiery Image Controller IC-417 version 2.1 Requires Fiery Productivity Package IC-417.
Ricoh® Pro 8110e/8120e Series B&W Cutsheet Printer	EFI Fiery Printer Controller EB-32
Ricoh Pro C700EX Color Cutsheet Printer	EFI Fiery E-8100 Print Server
Ricoh Pro C7200 Graphic Arts Edition Series Color Cutsheet Printer	EFI Fiery Color Controller E-45A (7200) EFI Fiery Color Controller E-35A (7200SL) EFI Fiery Color Controller E-85A (7200)
Ricoh Pro C9100/C9110 Color Cutsheet Printer	EFI Fiery E43/Pro 80 Controller EFI Fiery E83/QX Controller
Ricoh Pro C9200/C9210 Color Cutsheet Printer	EFI Fiery Color Controller E-85

6. Installation Procedures

Installation and Upgrades

See the Xerox® FreeFlow® Core Installation Guide for installation instructions. This document may be obtained from the Support & Drivers section on Xerox.com.

Prior to performing an upgrade, ensure all jobs have completely finished processing through the workflows. To minimize the time to perform the upgrade, delete all jobs.

Perform a full system backup. If you encounter issues during the upgrade, the backup can be restored.

FreeFlow Core 6.0 supports upgrades from version 5.0 or higher. Upgrading from prior versions requires upgrading to version 5.n.n prior to upgrading to 6.0. To obtain version 5.0, contact Support.

If you are upgrading from a version of FreeFlow Core 4.0.2.x or lower to FreeFlow Core 5.1.x prior to upgrading to version 6.0, the Save location will be automatically be relocated from <User Data Location>\Save Destinations to <User Data Location>\00000000-0000-0000-0000-000000000000\Data\Save Destinations.

For example, following the upgrade, the Save location will move from:

C:\Xerox\FreeFlow\Core\Data\Save Destinations to

C:\Xerox\FreeFlow\Core\Data\00000000-0000-0000-0000-000000000000\Data\Save Destinations.

FreeFlow Core 6.0 licensing only supports UUID in the form of (xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx) or MAC address in the form (xxxxxxxxxxxx). Customers using other license identifiers will need to provide a new license identifier in order to renew their license when upgrading to FreeFlow Core 6.0.

Upgrading to FreeFlow Core 6.n.n

1. Double-click the **FreeFlowCore-6.n.n-Setup.exe**.
2. Select the desired language and click **[OK]**.
3. Click **[Yes]** when prompted to reboot the system. Following the system restart, the FreeFlow Core Installer will reinitialize.

It could take several minutes for the Installer to reinitialize. If the Installer does not automatically restart after several minutes, double-click the Installer to continue the installation process.

4. Select the desired language and click **[OK]**.
5. In the Welcome window, click **[Next]**.
6. If the required prerequisite Roles and Features are not configured, the Installer will make the change and then prompt for a reboot before continuing. Reboot and start the installation process again.
7. If the Installer is unable to configure the prerequisite Roles and Features, a System Check log will appear. Perform the following steps:

- a. Cancel the upgrade.
 - b. Search 'ERROR' in the System Check log and configure the appropriate requirements. See the Installation Guide for more information.
 - c. Restart the installation process.
8. In the License Agreement window, accept the terms of the agreement and click **[Next]**.
 9. Do not change the destination of the install folders in the Destination Folders window. Click **[Next]**.
 10. In the License window, add a license file, if necessary. Click **[Next]**.
 11. In the Database Administration window, click **[Next]**.

The values in the Database Administration window should be prepopulated with the same values from the previous release. If the values are incorrect, see [Configuring SQL Server](#) earlier in this section for more information. To reconfigure the Database Administration information, refer to the step below. Otherwise, skip to step 14.

12. Enter the SQL Server database information, if necessary.
 - a. If Windows Authentication is being used with the SQL Server, select 'Windows Authentication,' otherwise select 'SQL Server Authentication.'
 - b. Enter the account credentials, if necessary.
 - c. Enter the Instance ID during SQL Server installation as the Database Instance ID. The Server name in SQL Server is formatted as: <hostname>\<Instance ID>. Only the Instance ID is required.
 - d. Enter 'localhost' as the Database System Hostname if using a local database or the hostname if using a remote database.

To change the Database Administration credentials after installation, use the Core Configure tool. If the database or service account credentials are changed manually, independent of Core Configure, the settings will not be retained in Core Configure or preserved during an upgrade.

13. In the Service Account window, click **[Next]**.

The values in the Service Account window should be prepopulated with the same values from the previous release.

If prompted for the service account logon, enter the service account user name and password if you are using a service account and uncheck the box to configure FreeFlow Core to use the local System account. If you are not using a service account, leave the check box selected to configure FreeFlow Core to use the local system account.

The service account can also be configured after installation using the Core Configure tool.

14. Click **[Install]** to begin the installation.
15. If you are asked if you want to permanently delete your FreeFlow Core configuration, click **[No]**. This saves your configured workflows, presets, etc.
16. Upon completion, click **[Finish]** and then **[Yes]** when prompted to restart the system.

Easy Start Workflows

To configure your system with predefined workflows, download the FreeFlow Core Easy Start Workflows from the Support & Drivers section on Xerox.com and follow the provided instructions.

1. Open a web browser and go to www.xerox.com.
2. Select [Customer Support/Support & Drivers/Software & Platforms/FreeFlow/FreeFlow Core].
3. Under FreeFlow Core, select 'Software.'
4. Select the appropriate Operating System and Language from the menus presented.
5. In the Utilities & Applications area, click on the appropriate FreeFlow Core Easy Starts link to download the file.
6. Once downloaded, decompress the file and double-click the **install.bat** file to install.

For detailed descriptions of each workflow and product configuration requirements, see the Xerox FreeFlow Core Easy Start Workflows Getting Started Guide. This document may be downloaded from the Support & Drivers section on Xerox.com.

Secure JMF

To enable secure JMF communication between a JMF Client and FreeFlow Core, configure the following:

1. Open port 7759 using the Windows Firewall utility.
2. Create a Self-Signed Certificate through IIS.
3. Right-click the certificate, and select [**Export Certificate**]. Export the certificate to the desktop.
4. Run the **installJMFCertificate** utility, entering the same password entered in step 3 when exporting the certificate.
5. Restart the FreeFlow Core JMF Server from the Service panel.
6. Using a web browser, enter: <https://<ip address of the FreeFlow Core server>:7759>.
7. Click [**Continue to this website**]. If a page displaying 'HTTP Status 404' appears, the configuration of FreeFlow Core for Secure JMF communication was successful.

Secure Printing

To enable secure printing between FreeFlow Core and a Xerox FreeFlow Print Server, the following must be configured:

1. Enable SSL at the print controller:
 - a. At the FreeFlow Print Server, login as System Administrator.
 - b. Go to [Setup > SSL/TLS].
 - c. Click [**Add Certificate**].
 - d. Create a 'Self Signed' certificate or Import a signed Certificate by choosing 'Signed Certificate from a Certificate Authority.'
 - e. Follow the steps in the Wizard and fill in the necessary information.
 - f. Click [**Install**].
 - g. Click the [**Close**] button in the Certificate window after configuring the certificate.
 - h. Select the 'Enable SSL/TLS' option.
 - i. Click the [**Close**] button and reboot the print controller, if necessary.

2. Enable the Printer certificate on the FreeFlow Core system.
 - a. From the FreeFlow Core desktop, launch the FreeFlow Core Certificate Tool.
 - b. Specify the Print Controller IP address or DNS name.
 - c. Choose the Print Controller.
 - d. Click **[Retrieve Certificate]**.
 - e. Once the certificate is installed, a message will appear stating "Certificate successfully installed".
3. Add a Printer Destination via FreeFlow Core and select the **[Secure Print]** check box to perform secure communication.

Saving a JDF Ticket to a Remote File System

When configuring a Save Node with options to save the ticket as JDF and the file path is to retrieve a remote file system (e.g., `\\host\sharedDir`), the Login ID of the FreeFlow Core JMF Server must be changed to a user that has access to the remote directory location.

FreeFlow Core Cloud Print and FreeFlow Core Submit

If you are running FreeFlow Core Cloud and utilizing the Core Cloud Print or Core Submit client applications, the version of the client applications need to match the version installed on the server. If your server has been upgraded to a newer version of software, the client software must also be upgraded for the all the functionality to work properly. To upgrade the client applications:

1. Double-click the **FreeFlowCoreCloudPrint-6.x.x-Setup.exe** or **FreeFlowCoreSubmit-6.x.x-Setup.exe** to run the file.
2. Select **[Run]**, if prompted, to allow an unknown publisher to make changes to this computer.
3. Select the desired language for the Installer user interface to display and click **[OK]**.
4. In the Welcome window, click **[Next]**.
5. In the License Agreement window, accept the terms of the license agreement and click **[Next]**.
6. For upgrades, do not change the installation folder. Click **[Next]**.
7. Click **[Install]** to start the installation.
8. Upon completion, click **[Finish]**.

Backup and Restore

Backing up the software is a Customer responsibility. Backup for your FreeFlow product can be performed using any commercially available backup and restore software. Ensure that you run a full system backup that includes all hardware drives that contain the FreeFlow product and database software. It is recommended that the backup software have the ability to back up open files.

Online Resources

For additional product documentation, community forums, and support, go to <http://www.xerox.com/automate>.

7. Third Party License Disclosures

DO NOT TRANSLATE OR LOCALIZE THIRD PARTY LICENSES

Xerox elects to use only the GNU Lesser General Public License version 2.1 (LGPL)/GNU General Public License version 2 (GPL) for any software where a choice of LGPL/GPL license versions are made available with the language indicating that LGPLv2.1/GPLv2 or any later version may be used, or where a choice of which version of the LGPL/GPL is applied is unspecified.

%%The following license may be included in this product:

License: Apache License 2.0

Apache License

Version 2.0, January 2004

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

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a

copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You

meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or

implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");
you may not use this file except in compliance with the License.
You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

%%The following license may be included in this product:

License: BSD-3-Clause

The 3-Clause BSD License

SPDX short identifier: BSD-3-Clause

Note: This license has also been called the "New BSD License" or "Modified BSD License". See also the 2-clause BSD License.

Copyright <YEAR> <COPYRIGHT HOLDER>

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 copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

%%The following license may be included in this product:

License: GNU version 2

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any

patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this

License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange;
or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing

to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the 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 Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show
w'.
```

```
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James
Hacker.
```

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

%%The following license may be included in this product:

License: GNU version 3

GNU 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.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

“This License” refers to version 3 of the GNU General Public License.

“Copyright” also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

“The Program” refers to any copyrightable work licensed under this License. Each licensee is addressed as “you”. “Licensees” and “recipients” may be individuals or organizations.

To “modify” a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a “modified version” of the earlier work or a work “based on” the earlier work.

A “covered work” means either the unmodified Program or a work based on the Program.

To “propagate” a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To “convey” a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays “Appropriate Legal Notices” to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The “source code” for a work means the preferred form of the work for making modifications to it. “Object code” means any non-source form of a work.

A “Standard Interface” means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The “System Libraries” of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A “Major Component”, in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The “Corresponding Source” for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an “aggregate” if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A “User Product” is either (1) a “consumer product”, which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, “normally used” refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

“Installation Information” for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

“Additional permissions” are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional

permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered “further restrictions” within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An “entity transaction” is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A “contributor” is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's “contributor version”.

A contributor's “essential patent claims” are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For

purposes of this definition, “control” includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a “patent license” is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To “grant” such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. “Knowingly relying” means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is “discriminatory” if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you

cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

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

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <<https://www.gnu.org/licenses/>>. Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program> Copyright (C) <year> <name of author>
```

This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.

This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an “about box”.

You should also get your employer (if you work as a programmer) or school, if any, to sign a “copyright disclaimer” for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see [<https://www.gnu.org/licenses/>](https://www.gnu.org/licenses/).

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read [<https://www.gnu.org/licenses/why-not-lgpl.html>](https://www.gnu.org/licenses/why-not-lgpl.html).

%%The following license may be included in this product:

License: JDOM

JDOM license

Copyright (C) 2000-2012 Jason Hunter & Brett McLaughlin.

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 disclaimer that follows these conditions in the documentation and/or other materials provided with the distribution.
3. The name "JDOM" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact <request_AT_jdom_DOT_org>.
4. Products derived from this software may not be called "JDOM", nor may "JDOM" appear in their name, without prior written permission from the JDOM Project Management <request_AT_jdom_DOT_org>. In addition, we request (but do not require) that you include in the end-user documentation provided with the redistribution and/or in the software itself an acknowledgement equivalent to the following:

"This product includes software developed by the JDOM Project (<http://www.jdom.org/>)."

Alternatively, the acknowledgment may be graphical using the logos available at <http://www.jdom.org/images/logos>.

THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE JDOM AUTHORS OR THE PROJECT 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.

This software consists of voluntary contributions made by many individuals on behalf of the JDOM Project and was originally created by Jason Hunter <jhunter_AT_jdom_DOT_org> and Brett McLaughlin <brett_AT_jdom_DOT_org>. For more information on the JDOM Project, please see <<http://www.jdom.org/>>.

%%The following license may be included in this product:

License: LGPL version 2.1

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

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

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that

work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a

combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices.

Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

%%The following license may be included in this product:

License: MIT

The MIT License

Copyright <YEAR> <COPYRIGHT HOLDER>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

%%The following license may be included in this product:

License: MPL 1.1

MOZILLA PUBLIC LICENSE

Version 1.1

1. Definitions.

1.0.1. "Commercial Use" means distribution or otherwise making the Covered Code available to a third party.

1.1. "Contributor" means each entity that creates or contributes to the creation of Modifications.

1.2. "Contributor Version" means the combination of the Original Code, prior Modifications used by a Contributor, and the Modifications made by that particular Contributor.

1.3. "Covered Code" means the Original Code or Modifications or the combination of the Original Code and Modifications, in each case including portions thereof.

1.4. "Electronic Distribution Mechanism" means a mechanism generally accepted in the software development community for the electronic transfer of data.

1.5. "Executable" means Covered Code in any form other than Source Code.

1.6. "Initial Developer" means the individual or entity identified as the Initial Developer in the Source Code notice required by Exhibit A.

1.7. "Larger Work" means a work which combines Covered Code or portions thereof with code not governed by the terms of this License.

1.8. "License" means this document.

1.8.1. "Licensable" means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.

1.9. "Modifications" means any addition to or deletion from the substance or structure of either the Original Code or any previous Modifications. When Covered Code is released as a series of files, a Modification is:

A. Any addition to or deletion from the contents of a file containing Original Code or previous Modifications.

B. Any new file that contains any part of the Original Code or previous Modifications.

1.10. "Original Code" means Source Code of computer software code which is described in the Source Code notice required by Exhibit A as Original Code, and which, at the time of its release under this License is not already Covered Code governed by this License.

1.10.1. "Patent Claims" means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.

1.11. "Source Code" means the preferred form of the Covered Code for making modifications to it, including all modules it contains, plus any associated interface definition files, scripts used to control compilation and installation of an Executable, or source code differential comparisons against either the Original Code or another well known, available Covered Code of the Contributor's choice. The Source Code can be in a compressed or archival form, provided the appropriate decompression or de-archiving software is widely available for no charge.

1.12. "You" (or "Your") means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License or a future version of this License issued under Section 6.1. For legal entities, "You" includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

2. Source Code License.

2.1. The Initial Developer Grant.

The Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license, subject to third party intellectual property claims:

(a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer to use, reproduce, modify, display, perform, sublicense and distribute the Original Code (or portions thereof) with or without Modifications, and/or as part of a Larger Work; and

(b) under Patents Claims infringed by the making, using or selling of Original Code, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Code (or portions thereof).

(c) the licenses granted in this Section 2.1(a) and (b) are effective on the date Initial Developer first distributes Original Code under the terms of this License.

(d) Notwithstanding Section 2.1(b) above, no patent license is granted: 1) for code that You delete from the Original Code; 2) separate from the Original Code; or 3) for infringements caused by: i) the modification of the Original Code or ii) the combination of the Original Code with other software or devices.

2.2. Contributor Grant.

Subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license

(a) under intellectual property rights (other than patent or trademark) Licensable by Contributor, to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof) either on an unmodified basis, with other Modifications, as Covered Code and/or as part of a Larger Work; and

(b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: 1) Modifications made by that Contributor (or portions thereof); and 2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).

(c) the licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first makes Commercial Use of the Covered Code.

(d) Notwithstanding Section 2.2(b) above, no patent license is granted: 1) for any code that Contributor has deleted from the Contributor Version; 2) separate from the Contributor Version; 3) for infringements caused by: i) third party modifications of Contributor Version or ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or 4) under Patent Claims infringed by Covered Code in the absence of Modifications made by that Contributor.

3. Distribution Obligations.

3.1. Application of License.

The Modifications which You create or to which You contribute are governed by the terms of this License, including without limitation Section 2.2. The Source Code version of Covered Code may be distributed only under the terms of this License or a future version of this License released under Section 6.1, and You must include a copy of this License with every copy of the Source Code You distribute. You may not offer or impose any terms on any Source Code version that alters or restricts the applicable version of this License or the recipients' rights hereunder. However, You may include an additional document offering the additional rights described in Section 3.5.

3.2. Availability of Source Code.

Any Modification which You create or to which You contribute must be made available in Source Code form under the terms of this License either on the same media as an Executable version or via an accepted Electronic Distribution Mechanism to anyone to whom you made an Executable version available; and if made available via Electronic

Distribution Mechanism, must remain available for at least twelve (12) months after the date it initially became available, or at least six (6) months after a subsequent version of that particular Modification has been made available to such recipients. You are responsible for ensuring that the Source Code version remains available even if the Electronic Distribution Mechanism is maintained by a third party.

3.3. Description of Modifications.

You must cause all Covered Code to which You contribute to contain a file documenting the changes You made to create that Covered Code and the date of any change. You must include a prominent statement that the Modification is derived, directly or indirectly, from Original Code provided by the Initial Developer and including the name of the Initial Developer in (a) the Source Code, and (b) in any notice in an Executable version or related documentation in which You describe the origin or ownership of the Covered Code.

3.4. Intellectual Property Matters

(a) Third Party Claims.

If Contributor has knowledge that a license under a third party's intellectual property rights is required to exercise the rights granted by such Contributor under Sections 2.1 or 2.2, Contributor must include a text file with the Source Code distribution titled "LEGAL" which describes the claim and the party making the claim in sufficient detail that a recipient will know whom to contact. If Contributor obtains such knowledge after the Modification is made available as described in Section 3.2, Contributor shall promptly modify the LEGAL file in all copies Contributor makes available thereafter and shall take other steps (such as notifying appropriate mailing lists or newsgroups) reasonably calculated to inform those who received the Covered Code that new knowledge has been obtained.

(b) Contributor APIs.

If Contributor's Modifications include an application programming interface and Contributor has knowledge of patent licenses which are reasonably necessary to implement that API, Contributor must also include this information in the LEGAL file.

(c) Representations.

Contributor represents that, except as disclosed pursuant to Section 3.4(a) above, Contributor believes that Contributor's Modifications are Contributor's original creation(s) and/or Contributor has sufficient rights to grant the rights conveyed by this License.

3.5. Required Notices.

You must duplicate the notice in Exhibit A in each file of the Source Code. If it is not possible to put such notice in a particular Source Code file due to its structure, then You must include such notice in a location (such as a relevant directory) where a user would be likely to look for such a notice. If You created one or more Modification(s) You may add your name as a Contributor to the notice described in Exhibit A. You must also duplicate this License in any documentation for the Source Code

where You describe recipients' rights or ownership rights relating to Covered Code. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Code. However, You may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear than any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

3.6. Distribution of Executable Versions.

You may distribute Covered Code in Executable form only if the requirements of Section 3.1-3.5 have been met for that Covered Code, and if You include a notice stating that the Source Code version of the Covered Code is available under the terms of this License, including a description of how and where You have fulfilled the obligations of Section 3.2. The notice must be conspicuously included in any notice in an Executable version, related documentation or collateral in which You describe recipients' rights relating to the Covered Code. You may distribute the Executable version of Covered Code or ownership rights under a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable version does not attempt to limit or alter the recipient's rights in the Source Code version from the rights set forth in this License. If You distribute the Executable version under a different license You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or any Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

3.7. Larger Works.

You may create a Larger Work by combining Covered Code with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Code.

4. Inability to Comply Due to Statute or Regulation.

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Code due to statute, judicial order, or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be included in the LEGAL file described in Section 3.4 and must be included with all distributions of the Source Code. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

5. Application of this License.

This License applies to code to which the Initial Developer has attached the notice in Exhibit A and to related Covered Code.

6. Versions of the License.

6.1. New Versions.

Netscape Communications Corporation ("Netscape") may publish revised and/or new versions of the License from time to time. Each version will be given a distinguishing version number.

6.2. Effect of New Versions.

Once Covered Code has been published under a particular version of the License, You may always continue to use it under the terms of that version. You may also choose to use such Covered Code under the terms of any subsequent version of the License published by Netscape. No one other than Netscape has the right to modify the terms applicable to Covered Code created under this License.

6.3. Derivative Works.

If You create or use a modified version of this License (which you may only do in order to apply it to code which is not already Covered Code governed by this License), You must (a) rename Your license so that the phrases "Mozilla", "MOZILLAPL", "MOZPL", "Netscape", "MPL", "NPL" or any confusingly similar phrase do not appear in your license (except to note that your license differs from this License) and (b) otherwise make it clear that Your version of the license contains terms which differ from the Mozilla Public License and Netscape Public License. (Filling in the name of the Initial Developer, Original Code or Contributor in the notice described in Exhibit A shall not of themselves be deemed to be modifications of this License.)

7. DISCLAIMER OF WARRANTY.

COVERED CODE IS PROVIDED UNDER THIS LICENSE ON AN "AS IS" BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED CODE IS FREE OF DEFECTS, MERCHANTABILITY, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED CODE IS WITH YOU. SHOULD ANY COVERED CODE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED CODE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

8. TERMINATION.

8.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. All sublicenses to the Covered Code which are properly granted shall survive any termination of this License. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

8.2. If You initiate litigation by asserting a patent infringement

claim (excluding declaratory judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You file such action is referred to as "Participant") alleging that:

(a) such Participant's Contributor Version directly or indirectly infringes any patent, then any and all rights granted by such Participant to You under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively, unless if within 60 days after receipt of notice You either: (i) agree in writing to pay Participant a mutually agreeable reasonable royalty for Your past and future use of Modifications made by such Participant, or (ii) withdraw Your litigation claim with respect to the Contributor Version against such Participant. If within 60 days of notice, a reasonable royalty and payment arrangement are not mutually agreed upon in writing by the parties or the litigation claim is not withdrawn, the rights granted by Participant to You under Sections 2.1 and/or 2.2 automatically terminate at the expiration of the 60 day notice period specified above.

(b) any software, hardware, or device, other than such Participant's Contributor Version, directly or indirectly infringes any patent, then any rights granted to You by such Participant under Sections 2.1(b) and 2.2(b) are revoked effective as of the date You first made, used, sold, distributed, or had made, Modifications made by that Participant.

8.3. If You assert a patent infringement claim against Participant alleging that such Participant's Contributor Version directly or indirectly infringes any patent where such claim is resolved (such as by license or settlement) prior to the initiation of patent infringement litigation, then the reasonable value of the licenses granted by such Participant under Sections 2.1 or 2.2 shall be taken into account in determining the amount or value of any payment or license.

8.4. In the event of termination under Sections 8.1 or 8.2 above, all end user license agreements (excluding distributors and resellers) which have been validly granted by You or any distributor hereunder prior to termination shall survive termination.

9. LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED CODE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

10. U.S. GOVERNMENT END USERS.

The Covered Code is a "commercial item," as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of "commercial computer software" and "commercial computer software documentation," as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Code with only those rights set forth herein.

11. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by California law provisions (except to the extent applicable law, if any, provides otherwise), excluding its conflict-of-law provisions. With respect to disputes in which at least one party is a citizen of, or an entity chartered or registered to do business in the United States of America, any litigation relating to this License shall be subject to the jurisdiction of the Federal Courts of the Northern District of California, with venue lying in Santa Clara County, California, with the losing party responsible for costs, including without limitation, court costs and reasonable attorneys' fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License.

12. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

13. MULTIPLE-LICENSED CODE.

Initial Developer may designate portions of the Covered Code as "Multiple-Licensed". "Multiple-Licensed" means that the Initial Developer permits you to utilize portions of the Covered Code under Your choice of the MPL or the alternative licenses, if any, specified by the Initial Developer in the file described in Exhibit A.

EXHIBIT A -Mozilla Public License.

``The contents of this file are subject to the Mozilla Public License Version 1.1 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at <https://www.mozilla.org/MPL/>

Software distributed under the License is distributed on an "AS IS" basis, WITHOUT WARRANTY OF ANY KIND, either express or implied. See the License for the specific language governing rights and limitations under the License.

The Original Code is _____.

The Initial Developer of the Original Code is

_____.
Portions created by _____ are Copyright (C) _____
_____. All Rights Reserved.

Contributor(s): _____.

Alternatively, the contents of this file may be used under the terms of the _____ license (the "[___] License"), in which case the provisions of [_____] License are applicable instead of those above. If you wish to allow use of your version of this file only under the terms of the [___] License and not to allow others to use your version of this file under the MPL, indicate your decision by deleting the provisions above and replace them with the notice and other provisions required by the [___] License. If you do not delete the provisions above, a recipient may use your version of this file under either the MPL or the [___] License."

[NOTE: The text of this Exhibit A may differ slightly from the text of the notices in the Source Code files of the Original Code. You should use the text of this Exhibit A rather than the text found in the Original Code Source Code for Your Modifications.]

%%The following license may be included in this product:

License: MPL 2.0

Mozilla Public License

Version 2.0

1. Definitions

1.1. "Contributor"

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

1.2. "Contributor Version"

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

1.3. "Contribution"

means Covered Software of a particular Contributor.

1.4. "Covered Software"

means Source Code Form to which the initial Contributor has attached the notice in Exhibit A, the Executable Form of such Source Code Form, and Modifications of such Source Code Form, in each case including portions thereof.

1.5. "Incompatible With Secondary Licenses"

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

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

1.6. "Executable Form"

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

1.7. "Larger Work"

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

1.8. "License"

means this document.

1.9. "Licensable"

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

1.10. "Modifications"

means any of the following:

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

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

1.11. "Patent Claims" of a Contributor

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

1.12. "Secondary License"

means either the GNU General Public License, Version 2.0, the GNU Lesser General Public License, Version 2.1, the GNU Affero General Public License, Version 3.0, or any later versions of those licenses.

1.13. "Source Code Form"

means the form of the work preferred for making modifications.

1.14. "You" (or "Your")

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

2. License Grants and Conditions

2.1. Grants

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

under intellectual property rights (other than patent or trademark) Licensable by such Contributor to use, reproduce, make available, modify, display, perform, distribute, and otherwise exploit its

Contributions, either on an unmodified basis, with Modifications, or as part of a Larger Work; and under Patent Claims of such Contributor to make, use, sell, offer for sale, have made, import, and otherwise transfer either its Contributions or its Contributor Version.

2.2. Effective Date

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

2.3. Limitations on Grant Scope

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

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

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

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

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

2.4. Subsequent Licenses

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

2.5. Representation

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

2.6. Fair Use

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

2.7. Conditions

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

3. Responsibilities

3.1. Distribution of Source Form

All distribution of Covered Software in Source Code Form, including any Modifications that You create or to which You contribute, must be under the terms of this License. You must inform recipients that the Source Code Form of the Covered Software is governed by the terms of this License, and how they can obtain a copy of this License. You may not attempt to alter or restrict the recipients' rights in the Source Code Form.

3.2. Distribution of Executable Form

If You distribute Covered Software in Executable Form then:

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

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

3.3. Distribution of a Larger Work

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

3.4. Notices

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

3.5. Application of Additional Terms

You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, You may do so only on Your own behalf, and not on behalf of any Contributor. You must make it absolutely clear that any such warranty, support, indemnity, or liability obligation is offered by You alone, and You hereby agree to indemnify every Contributor for any liability incurred by such Contributor as a result of warranty, support, indemnity or liability terms You offer. You may include additional disclaimers of warranty and limitations of liability specific to any jurisdiction.

4. Inability to Comply Due to Statute or Regulation

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

5. Termination

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

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

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

6. Disclaimer of Warranty

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

7. Limitation of Liability

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

applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

8. Litigation

Any litigation relating to this License may be brought only in the courts of a jurisdiction where the defendant maintains its principal place of business and such litigation shall be governed by laws of that jurisdiction, without reference to its conflict-of-law provisions. Nothing in this Section shall prevent a party's ability to bring cross-claims or counter-claims.

9. Miscellaneous

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

10. Versions of the License

10.1. New Versions

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

10.2. Effect of New Versions

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

10.3. Modified Versions

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

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

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

Exhibit A - Source Code Form License Notice

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

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

You may add additional accurate notices of copyright ownership.

Exhibit B - "Incompatible With Secondary Licenses" Notice

This Source Code Form is "Incompatible With Secondary Licenses", as defined by the Mozilla Public License, v. 2.0.