OL® Connect Desktop

Installation and Activation Guide

Version 2024.1.1



Objectif Lune



OL Connect (Desktop Edition)
Installation and Activation Guide
Version 2024.1.1
Last Revision: 2024-06-11

All trademarks displayed are the property of their respective owners.

© Upland Software, Inc. Inc. 1994-2024. All rights reserved. No part of this documentation may be reproduced, transmitted or distributed outside of Upland Software, Inc. by any means whatsoever without the express written permission of Upland Software, Inc.. Upland Software, Inc. disclaims responsibility for any errors and omissions in this documentation and accepts no responsibility for damages arising from such inconsistencies or their further consequences of any kind. Upland Software, Inc. reserves the right to alter the information contained in this documentation without notice.

Table of Contents

System and hardware considerations	7
Antivirus Exclusions	
Directories and folders	
Database Considerations	{
Using the MariaDB Instance from the Installer	
Installing Connect using an existing MySQL instance	!
Installing Connect using an existing Microsoft SQL Server instance	
When modifying Connect	
Environment considerations	1
Remote Desktop Support	1
Antivirus Considerations	1
Windows Search Indexing Service	1
Commandline switches and .ini entries	
Language and Encoding Considerations	1:
Network considerations	1
Firewall/Port considerations	
Performance considerations	1
Performance analysis details	
Engine configuration	
Template optimization	
Network and internet connections	1
Hardware configuration	
System requirements	16
Operating system	1
Supported virtual environments	
Recommended system requirements for the OL Connect / Workflow servers	
A word of caution	
stallation and activation	18
Where to obtain the installers	18
Installation prerequisites	18
User accounts and security	19
Windows user account	
Installing OL Connect on machines without internet access	19
Updating Connect	
Initial OL Connect installation	
Installation Wizard	2
Updating from Connect versions predating 2019.1	
Starting the OL Connect installer	
Prerequisites Installation	
Welcome screen	
License Agreement	2

Component Selection	22
Database Configuration	24
Ready to install	
Installation Finished	
The Product Update Manager	
Product Activation	
Running OL Connect installer in Silent Mode	27
Updating from Connect versions predating 2019.1	
General information	
Installation Properties file	
Properties file examples	
Exit Codes	
Activating a License	
Obtaining the OL Connect Magic Number Requesting a license	
Activating OL Connect	
Reactivating your license	
Migrating to a new workstation	
Before installing the software	
Downloading and installing the software	
Backing up files from the current workstation	
Upgrading	
Upgrading from previous OL Connect versions	
Upgrading from PReS Classic	48
Engines preferences	49
Background	40
-	
Settings	
Configure engine options Configure merge engine options	
Buttons	
Dateons	
Parallel Processing preferences	53
Parallel Processing properties	53
Preset selection	53
Content Creation Tab	53
Buttons	54
Known Issues	55
Additional Content font selection issue	55
Unicode Variation Selectors issue	55
ODBC drivers do not all work with OL Connect	
Incorrect colors in print preview	
Concatenating PDF files is slower	55

Legal Notices and Acknowledgments	65
Uninstalling	64
Master Page not affected by style rules for <body></body>	56
Account permission issues	55

System and hardware considerations

There are a variety of considerations to be aware of. These are documented in the following pages:

- "System requirements" on page 16
- "Database Considerations" on the facing page
- "Environment considerations" on page 11
- "Known Issues" on page 55
- "Language and Encoding Considerations" on page 12
- "Antivirus Exclusions" below
- "Performance considerations" on page 15

Antivirus Exclusions

The information on this page is designed to assist IT managers and IT professionals decide what anti-virus strategy to follow with consideration to OL Connect and their internal requirements and needs. This page describes the mode of operation and the files and folders used by OL Connect as well as the files, folders and executables that are recommended to be ignored for best possible performance and to avoid issues caused by anti-virus file locks.

IT managers and IT professionals then may decide the anti-virus strategy to follow for their internal requirements and needs depending on the statements outlined herein.

Directories and folders

All Connect applications are installed under an arbitrarily selectable main folder. If the default installation folder options were used, this installation folder would be "%PROGRAMFILES%\Objectif Lune\OL Connect".

The installation folder will hold all the executable files and other files and folders required for the operation of the whole product suite. All these files and folders remain static after installation. It depends upon the company virus protection strategy, if such files and folders will be monitored or not.

We do, however, recommend that the following file or folders be **excluded** from antivirus protection.

Working folders

Working folders for Connect are created and used on a per-user-basis under the respective user's profile folder, accessible on Windows with the standardized system variable

%USERPROFILE% in the subfolder "Connect". Working folders are:

- "%USERPROFILE%\Connect\filestore": This folder will hold non-intermediate files for the operation of Connect. Files in this folder will be used frequently, but not with a high frequency. Supervising this folder with a virus protection system should not have too much of an impact on the speed of the whole Connect suite.
- "%USERPROFILE%\Connect\logs": As the name implies, log files are created and updated here. These log files are plain text files. Virus protection may have an impact on the speed of the whole Connect suite.
- "%USERPROFILE%\Connect\temp": Storage folder for temporary data, usually intermittent files in multiple folders. Virus protection on this folder and its subfolders may have a serious impact on the performance of Connect.
- "%USERPROFILE%\Connect\workspace": Usually containing settings and helper files and folders. Supervising this folder with a virus protection system should not have too much of an impact on the speed of the whole Connect suite.

Database 1

Depending on the components installed, a database instance is created in a folder called "connect.database" under the Windows system temp folder. This folder is accessible via the standardized system variable %TMP%. Usually, folders holding such temporary files and folders should be excluded from a virus protection, because this influences the overall performance of the whole system at all. However the responsible person for the computer protection has to decide about the monitoring of such temporary folders following the company guidelines.

Database 2

Another database instance for Connect will be hold and used under the folder, which is intended to hold data, accessible by and for all users. The path to this folder is stored in the standardized system variable %PROGRAMDATA%. The Connect database instance is located in the subfolder "Objectif Lune\OL Connect\MariaDB".

As this database will be in extremely strong usage, virus protection on this folder and its sub-folders may have a **serious** impact on the performance of Connect.

Database Considerations

This page describes the different considerations and pre-requisites for the database backend used by OL Connect, whether using the MariaDB instance provided by the installer, or pre-existing (external) instance.

Using the MariaDB Instance from the Installer

The MariaDB Instance provided in the "Installation Wizard" on page 21 is already pre-configured with options to provide the most stable back-end setup.

Installing Connect using an existing MySQL instance

If MySQL Server is already present and you wish to use it, the following should be taken into consideration:

- The minimum supported MySQL version is MySQL 5.6.
- The MySQL account must have access to all permissions using the GRANT Command, including creating databases.
- The database configuration must include the following options:
 - max_connections = 200 : OL Connect uses a lot of database connections. This
 number ensures that even in high volume environments, enough connections will
 be available.
 - max_allowed_packet = 500M: In some implementations, especially when using Capture OnTheGo, large packet sizes are required to allow transferring binary files. This substantial packet size maximum setting ensures that the data received by OL Connect will be able to be stored within the database.
 - character-set-server = utf8 , collation-server = utf8_unicode_ci , default-character-set=utf8 : These indicate database support for UTF-8/Unicode.
- The database configuration must allow the use of mixed case table names.

 This is particularly an issue on Linux MySQL installations.
- The SQL instance must be open to access from other computers. This means the bindaddress option should not be set to 127.0.0.1 or localhost.

Caution: If you chose **not** to install the supplied MariaDB database, and instead opt for using a pre-existing (*External*) database then you yourself must ensure that the *External* database is accessible to Connect.

Upland Software, Inc. will take no responsibility for setting up database connections to any but the supplied MariaDB database.

See "Database Considerations" on the previous page for more information about setting up *external* databases.

Options available within the installer:

- The Configuration page for the local MySQL is displayed.
- MySQL settings are pre-filled with default values if no existing MySQL database configuration is found.
- MySQL settings are pre-filled with existing database configuration settings, if they point to a MySQL database type.

Installing Connect using an existing Microsoft SQL Server instance

If Microsoft SQL Server is already present and you wish to use it, the following should be taken into consideration:

Caution: If you chose **not** to install the supplied MariaDB database, and instead opt for using a pre-existing (*External*) database then you yourself must ensure that the *External* database is accessible to Connect.

Upland Software, Inc. will take no responsibility for setting up database connections to any but the supplied MariaDB database.

See "Database Considerations" on page 8 for more information about setting up external databases.

Note: Since OL Connect version 1.6 the minimum required version of the MS SQL Server is **SQL Server 2012**.

- When MS SQL is selected, the default values for root user are sa and 1433 for the port.
- If database settings from a previous OL Connect installation are found, the preexising settings will be displayed for the matching database type. For MS SQL settings, this will only work if they were created with Server Config Tool 1.5.0 or later, or the Installer for OL Connect 1.6.0 or later.
 - If the database type is changed in the Installer configuration page, the default values for this database type will be displayed.
 - If the pre-existing database settings are set to Hsqldb, the default database type selection will be MySQL.
- Selected database settings are stored in the preferences, and can be found in this file:
 C:\ProgramData\Objectif Lune\OL Connect\.settings\ConnectHostScope\com.objectiflune.repository.eclipselink.generic.prefs

When modifying Connect

- If the local MariaDB is removed from an installation, the Database Configuration page will offer additionally the Microsoft SQL Server database type with respective default values.
- If local MariaDB is added to an installation, the usual MariaDB Configuration page with default values will be displayed.

If the user has installed the Installer Supplied MySQL (2021.2 or earlier) or MariaDB (2022.1 and later) and then switches to an *external* Microsoft SQL by using the Server Configuration Tool, the supplied local database cannot be switched off. By design the installer adds a service dependency between Connect Server and the supplied MariaDB \ MySQL service.

To remove this dependency the user needs to do the following

- 1. Have a foreign Microsoft SQL running, ready for use with Connect Server.
- 2. Use the **Server Configuration Tool** Database Connection preferences to switch the database to Microsoft SQL.
- 3. Re-start the Connect Server Service, so that the modifications become active.
- 4. Counter check that everything is working properly with Microsoft SQL.
- 5. Open a command-line prompt with full administration rights.
- 6. Enter the command sc config OLConnect_Server depend= /. This removes the dependency.

Please be aware: The key word depend must be followed immediately by the equal sign, but between the equal sign and the forward slash there must be a space.

Additional information can be found here: http://serverfault.com/questions/24821.

7. After the dependency has been removed, it is possible to stop the supplied MariaDB \ MySQL service (OLConnect_MySQL).

Environment considerations

Remote Desktop Support

Tests have demonstrated that OL Connect can be used through Remote Desktop. It is however possible that certain combination of OS could cause issues. If problems are encountered, please contact OL Support and we will investigate.

OL Connect 1.3 and later have been certified under Remote Desktop.

Antivirus Considerations

- Antivirus software may slow down processing or cause issues if they are scanning in temporary folders or those used by OL Connect. Please see "Antivirus Exclusions" on page 7 for more information.
- Antivirus software might interfere with installation scripts, notably a VBS script to install fonts. McAfee, in particular, should be disabled temporarily during installation in order for MICR fonts to install and the installation to complete successfully.

Windows Search Indexing Service

Tests have concluded that the Windows Search service, used to provide indexing for Windows Search, can interfere with Connect when installing on a virtual machine. If the installation hangs during the last steps, it is necessary to completely disable this service during installation.

- Click on Start, Run.
- Type in services.msc and click OK.
- Locate the **Windows Search** service and double-click on it.
- Change the **Startup Type** to **Disable**, and click **Stop** to stop the service.
- Try the installation again.
- Once complete, you may re-enable the service and start it.

Commandline switches and .ini entries

OL Connect is intended to work stably and reliably, based on Java and the Eclipse framework. To ensure this reliability and robustness, many Java and Eclipse parameters have been tested and tuned, which is reflected in the respective .ini entries and the used command line switches. A collection of valuable settings has been elaborated and found its entry in OL Connect "good switches list" (called the "whitelist").

The protection of the end user's system is one of our main goals and therefore we have implemented a very strict verification mechanism, which ensures, that only these whitelisted ini entries and command-line switches are accepted, when one of Connect components is started and run. Please be therefore advised, that any non-whitelisted ini entry or command-line switch will be accepted and will - if tried to be used - lead to the respective application's "sudden death". If you should encounter such a behavior then please double-check your Connect log file/s for respective entries.

Language and Encoding Considerations

Please note the following considerations:

Language:

OL Connect is currently offered in several languages. You can switch between these languages via the Preferences dialog. The current languages include:

- English
- French
- German
- Spanish
- Italian
- Korean
- Portuguese
- Chinese (Simplified)
- Chinese (Traditional)
- Japanese.

The default language is English.

The OL Connect help system (this document and the online help) is currently only available in English and (for the biggest part) in French.

Encoding:

Issues can sometimes be encountered in menus and templates when running OL Connect on a non-English operating system. These are due to encoding issues and will be addressed in a later release.

Network considerations

The following should be taken into consideration in regards to network settings and communications.

If a local proxy is configured (in the Internet Explorer Options dialog), the option
 Bypass proxy server for local addresses must be checked, or some features depending on local communication will not work.

Firewall/Port considerations

The following describes all of the ports that can be used by an OL Connect solution. IT staff may decide the firewall strategy to follow for their internal requirements and needs depending on the statements outlined herein.

	Listens on port#	Destination port	Туре	Comment
Messenger	5863/5864	5863/5864	TCP+UDP	Used for inter-module communication
Connect Server	9340		ТСР	Used for Connect REST API
Connect Server	9350		ТСР	Dedicated internal connection for inter-process communication (i.e. between engines)
HTTP Server	8080		ТСР	
HTTPS Server	443		TCP	
NodeJS Server	9090		ТСР	
NodeJS HTTPS Server	8443		TCP	
SMTP Input plugin	25, or 587 when encryption is enabled		ТСР	
Email Input plugin		110	TCP	Default POP3 port
Secure Email Input plugin		993	ТСР	
Send Email plugin		25	TCP	Default SMTP port
Secure Email Output plugin		587	ТСР	
LPR		515	TCP	
LPD	515		ТСР	
Telnet	9100		TCP	
FTP Input/Output		21	ТСР	
MariaDB/MySQL	3306		TCP+UDP	
Microsoft SQL Server	1433		TCP+UDP	
HyperSQL	9001		ТСР	

- Port numbers in **bold** type are user configurable.
- Port numbers in **bold underlined** type are based on the type of database used.
- Some of the ports listed above may also be used by other modules.
- User-configurable modules may use other ports entirely, depending on the settings defined by the end user. A few examples:

The **Create Email Content** plugin will use the port defined in the Mail host setting in Workflow's OL Connect Preferences.

The ports used by the **HTTP Client Input** task, **Legacy SOAP Client** and **SOAP Client** plugin depend on the configured URL.

Performance considerations

This page is a guide to getting the most performance out of OL Connect as well as a rough guideline to indicate when it's best to upgrade.

Performance analysis details

In OL Connect, after each print job, a message dialog displays a print job summary (see Print Job Summary dialog). This summary may help you determine how best to maximize the performance of OL Connect.

OL Connect's Weaver engine can generate output at 8000 PPM (pages per minute).

If your print jobs are not running at the licensed speed, there may be several ways to improve the performance, as described below. Note however that it is not guaranteed that the licensed speed can be achieved with **any** job. Creating output for templates with very complex scripts or complex graphics resources will take a certain amount of time, even on high-end hardware.

If your print jobs are running at the licensed speed, then improving performance will require upgrading to the Professional or Enterprise edition. For advice please contact your local sales office.

Engine configuration

A **DataMapper engine** extracts data from a data file. A **Merge engine** merges the template and the data to create Email and Web output, or to create an intermediary file for Printed output. The intermediary file is in turn used by a **Weaver engine** to prepare the Print output. A **Merge engine** merges the template and the data to create an intermediary file for Printed output. The intermediary file is in turn used by a **Weaver engine** to prepare the Print output.

Configuring these engines to match the hardware configuration is probably the fastest and most effective way to improve OL Connect's performance. See "Engines preferences" on page 49 for how to do this.

Template optimization

When you find that the speed per Merge engine - the Content Creation speed - is low, optimizing a template can make a huge difference. For advice on how to optimize a template see:

Optimizing a template.

Network and internet connections

Use a fast network and internet connection or avoid loading external or internet resources. Using images, JavaScript or CSS resources located on a slow network or on a slow internet connection will obviously lead to a loss of speed. While we do our best for caching, a doc-

ument with 5,000 records which queries a page that takes 1 second to return a different image each time will, naturally, slow output generation down by up to 83 minutes.

Hardware configuration

When processing speed is important, the following is suggested after addressing the other issues mentioned in this topic.

- Antivirus exclusions. Sometimes, virus scanners, other security software or indexing services can interfere. It can help to disable those kinds of tools for the areas where Connect stores intermediate files. You could exclude the entire C:\User-s\connectuser>\Connect folder. See also: "Antivirus Exclusions" on page 7.
- Use a **high-performance**, **low-latency hard drive**. Connect benefits from fast I/O. Preferably use a Solid State Drive (SSD) or similar for storage.
- Use at least **8+ GB High-Quality RAM**. Check memory usage while the Print command is being executed to see if you need more than the minimum of 8GB. Assuming that the Designer needs 1GB each, and that each engine needs 1GB as well, you can roughly estimate how much memory is needed.
- **Consider using a physical machine** instead of a virtual machine. When running on a Virtual Machine, the machine may report that it has sufficient hardware (cores) available, but in a virtual environment you need to make sure that this hardware is not being shared with lots of other virtual machines.
- Consider using hardware with more physical cores. OL Connect doesn't limit the number of Merge engines that is used for a Print job, so if the number of physical cores is low, it makes sense to see if that can be increased. When running on a virtual machine, this is usually easy. When running on a physical machine, it means that you may have to switch hardware.
- For both virtual and non-virtual environments, make sure the machine is not busy with all kinds of other processes.

System requirements

These are the system requirements for OL Connect 2024.1

Operating system

Any 64 bit Windows Desktop or Server version that is actively supported by Microsoft.

New versions of Windows are supported within the first 6 months of their commercial release.

Note: ARM CPUs are not supported. This applies to machines running Windows on ARM and Apple Parallels.

Supported virtual environments

- VMWare vCenter/vSphere
- Microsoft Hyper-V/Azure
- Amazon Web Services (AWS)

Note: Multi-user environments like Terminal Services or VMWare Horizon are not officially supported.

Recommended system requirements for the OL Connect / Workflow servers

As with any software application, minimum hardware requirements represent the most basic hardware on which the software will run. Note however that settling for the minimum specification is unlikely to produce the performance you expect from the system. It can be used when configuring a trial or a development system, however.

- CPU: at least 8 64-bit logical processors (aka threads)
- RAM: at least 16 GB
- **Storage**: at least 100GB available on fast SSD for the system drive (by default this means the C: drive)
- Networking: at least 1Gbps

Note: These values are for the OL Connect **Servers** when used in production. The OL Connect Designer and the Workflow Configuration Tool can be used on systems with lower hardware specifications, so long as they are not used to generate production output.

A word of caution

OL Connect is used for a very wide variety of applications. Consequently, it is difficult to determine which system configuration will produce the best results for any given application. The specifications above are therefore meant as general guidelines that *should* produce the expected results for *most* implementations.

Keep in mind, however, that they may not represent the optimal configuration for your particular application.

Installation and activation

This topic provides detailed information about the installation and activation of OL Connect 2024.1.

Where to obtain the installers

The installer for OL Connect 2024.1 can be obtained on DVD or downloaded as follows:

- If you are a **Customer**, the installer can be downloaded from the Upland Objectif Lune Web Activation Manager (https://www.objectiflune.com/webactivationmanager/) or through the Upland Objectif Lune Update Manager if it is activated.
- If you are a **Reseller**, the installer can be downloaded from the Upland Objectif Lune <u>Partner Portal</u> site (https://extranet.objectiflune.com/) or through the Upland Objectif Lune Update Manager if it is activated.

Installation - important information

For important information about the Installation, including requirements and best practices, please see the following topics:

- "Installation prerequisites" below
- "User accounts and security" on the next page
- "Migrating to a new workstation" on page 37
- "Upgrading from previous OL Connect versions" on page 41

Installation - "How to" guides

For information on how to conduct the installation itself, choose from the following topics:

- "Installation Wizard" on page 21
- "Running OL Connect installer in Silent Mode" on page 27
- "Installing OL Connect on machines without internet access" on the next page

Activation

For information on licensing, please see "Activating a License" on page 34.

Installation prerequisites

- Make sure your system meets the "System requirements" on page 16.
- OL Connect Version 2024.1 can be installed under a regular user account with Administrator privileges., see "User accounts and security" on the next page.

- OL Connect **must** be installed on an NTFS file system.
- OL Connect requires Microsoft .NET Framework 4.5 already be installed on the target system.
- Connect 2019.1 requires updated Connect License and/or Update Manager.
 See "Upgrading from previous OL Connect versions" on page 41 for details.

User accounts and security

Windows user account

Connect requires local Windows Administrator rights when installing the software and activating the software license. This is to allow read/write access to protected Windows folders and registry entries.

Note: Installing as the *Local System* account is not supported.

Once installed Connect requires only standard Windows user credentials to run.

The following links contain the details as to when and where Windows Administrator rights are required:

- Connect Installation: "Installation Wizard" on page 21
- Activating Connect: "Activating OL Connect" on page 36

Permissions for OL Connect Designer

OL Connect Designer does not require any special permissions to run besides that of a regular program.

It does not require administrative rights and only needs permission to read/write in any folder where templates are located.

If generating Print output, OL Connect Designer requires permission on the printer or printer queue to send files.

Installing OL Connect on machines without internet access

Installing OL Connect2024.1 in offline mode requires some extra steps. These are listed below.

Updating Connect

Updating to OL Connect 2024.1 from earlier Connect version

In order to update OL Connect to 2024.1 it is first necessary to update the OL Connect license and Update Manager .

For further details on how to upgrade the OL Update Manager to the latest version and update your OL Connect License see the Update Manager 1.8 - Upgrade Guide.

For full details on how update OL Connect see "Upgrading from previous OL Connect versions" on page 41.

Initial OL Connect installation

GoDaddy Root Certificate Authority needs to be installed

In order to install OL Connect it is necessary for the GoDaddy Root Certificate Authority to be installed (G2 Certificate) on the host machine and for this to be verified online. When a machine hosting the installation does not have access to the Internet, the installation will fail because the verification cannot be performed. To solve this problem one must first ensure that all Windows updates have been installed on the host machine. Once the Windows updates are confirmed as being up to date, then complete the following steps:

- Go to https://certs.godaddy.com/repository and download the following two certificates to copy to the offline machine:
 - GoDaddy Class 2 Certification Authority Root Certificate G2 the file is gdrootg2.crt
 - GoDaddy Secure Server Certificate (Intermediate Certificate) G2 the file is gdig2.crt
- 2. Install the certificates: Right mouse click -> Install Certificate, and follow the steps through the subsequent wizard.
- 3. Now copy the OL Connect installer to the offline machine and start the installation as

Windows certificate validation - Certificate Revocation List retrieval should be switched off

For your security Upland Objectif Lune digitally signs all relevant files with our own name and certificate. The integrity of these files is checked at various times by different, context related, methods. One of these checks, done during the installation process, uses the Windows certificate validation check.

The Windows certificate validation process not only checks the integrity of a file against its signature, but also usually checks if the certificate itself is still valid. That check is done against the current Certificate Revocation List (CRL), which needs to be retrieved from the internet. However, if the machine in question does not have internet access, the retrieval of the CRL must fail, which will lead to subsequent validation issues.

To circumvent such issues it is **highly recommended** to switch off the CRL retrieval prior to

installing Connect on machines without internet access. There is no security risk associated with this, as the CRLs would never be retrievable without internet access, anyway. Advantage of the switch will not only be found during the installation and operation of Connect, but also in some speed improvements for any application which use signed binaries.

To switch off CRL retrieval on the computer, complete the following steps:

- 1. Open the "Internet Options" via the Control Panel
- 2. Select the "Advanced" tab and scroll down to "Security" node.
- 3. Uncheck the entry "Check for publisher's certificate revocation" under that node.
- 4. Click the OK button to close the dialog.
- 5. Re-start the computer.

Installation Wizard

Updating from Connect versions predating 2019.1

In order to update OL Connect to 2024.1 from Connect versions prior to 2019.1 it is first necessary to update the Connect License.

For details on how to upgrade the Connect License see "Users of OL Connect prior to 2019.1" on page 42

Starting the OL Connect installer

The OL Connect installer is supplied as an executable file.

Double click on the executable file and after a short pause the Setup Wizard will appear to guide through the installation steps.

Note: OL Connect **requires** prior installation of Microsoft .NET Framework 4.5. For a full list of other prerequisites, see "Installation prerequisites" on page 18.

Note: It is recommended to install and use OL Connect Designer under the same user account. If you install and run OL Connect Designer under different user accounts (for example, install as *User1* and run Designer as *User2*), account permission issues may occur.

Running the Installation with extra logging

The installer can be run with enhanced logging options, if needed.

To do so, run the OL_Connect_<<Edition>>_2023.2.n.nnnnn_bnnnn.exe (replace <<Edition>> with either Enterprise, Professional or Desktop) from the command line with one of the following command line options:

- OL_Connect_<<Edition>>_2023.2.n.nnnnn_bnnnn.exe --verbose
 This adds extra debugging style logging to the installation process.
- OLConnect_<<Edition>>_2023.2.n.nnnnn_bnnnn.exe --trace
 This adds full trace style logging to the installation process. The log file this produces will be very large, as this option logs everything.

Prerequisites Installation

The installer will check for prerequisite technologies as the first step in the installation process. If this check finds some technologies are missing, it will install those technologies, before continuing with the installation.

Welcome screen

After any prerequisites are installed, the installer Welcome screen appears.

Click **Next** to continue with the installation.

If the installation is an upgrade over a pre-existing OL Connect installation, the installer will first uninstall the earlier version.

If you would like to retain the usage information from that pre-existing OL Connect installation, do not select the **Remove User data** checkbox option.

For information about exactly what data would be saved or deleted, please see "Pre-existing User Data" on page 45.

Switching to a different edition

When switching to a different edition, for example from the Professional to the Enterprise edition, the installer may indicate that the edition to be installed is not the same as the one for which the license is valid. In that case, the license file must first be removed from the following folder:

C:\ProgramData\Objectif Lune\OL Connect\licenses

License Agreement

The next page displays the End User License Agreement, which needs to be read and accepted before clicking **Next**.

Component Selection

After clicking the Next button, the Component Selection page appears, in which the different components of OL Connect can be selected for installation.

The options are:

- **Base**: The installation files required for any OL Connect installation. This component is not optional.
- **Designer**: The Designer module (see The Designer) can be installed standalone (with no other installed modules) on as many machines as you like. It does not require a license to run as a standalone designer tool. This allows any number of people to use the Designer for creating jobs, but without production capabilities such as automation and commingling. The Designer module is optional, but it is recommended that it always be installed.
- MariaDB Server: A supplied MariaDB database used by OL Connect.

The database is used for referencing temporary Connect files and for sorting temporarily extracted data, and similar.

Note: When performing an upgrade installation, if the MariaDB version has not significantly changed, then no attempt will be made to upgrade the database content.

If there is a significant MariaDB version change, the database content will be upgraded, so that it will continue to work with the new MariaDB version.

A pre-existing MariaDB, MySQL or Microsoft SQL server (referred to as an *external* database, in this documentation) *could* be used instead, for the same purposes. The *external* database could reside on the same computer or on a separate server. If you wish to make use of an *external* database, please make sure the **MariaDB** option is not selected.

Caution: If you chose **not** to install the supplied MariaDB database, and instead opt for using a pre-existing (*External*) database then you yourself must ensure that the *External* database is accessible to Connect.

Upland Software, Inc. will take no responsibility for setting up database connections to any but the supplied MariaDB database.

See "Database Considerations" on page 8 for more information about setting up external databases.

• **Destination folder**: This is the location where Connect components are to be installed. Use the Browse button to navigate to a folder other than the default, if required.

Note: The installation path cannot contain any non ASCII characters (such as Asian language Unicode characters). Nor can it contain characters that Windows disallows in filenames (such as '?', '>' or trailing spaces). If an invalid character is entered, the Installation Path entry box will turn red and a description of the error will be displayed in the information area.

The installer calculates how much disk space is required for installing the selected components, along with how much space is available.

- **Total Required Space**: Displays the amount of disk space required for the selected components.
- **Space Remaining**: Displays the amount of space available after installation on the drive currently in the Installation Path.

Database Configuration

The Default **Database Configuration** page appears if the supplied *MariaDB* module was selected for installation in the *Product Selection* screen. It defines the administrative root password for the MariaDB server as well as which port it uses for communication.

The installer will automatically configure the Connect *Server* to use the supplied password and port.

• **Port**: The port on which MariaDB will expect requests to come though, and through which it itself responds.

A check is run to confirm whether the specified TCP\IP Port Number is available on the local machine. If it is already being used by another service (generally, an existing MySQL or MariaDB installation), the number is highlighted in red and a warning message is displayed.

Note: The MariaDB database controlled by the *OLConnect_MariaDB* service communicates through port 3306 by default.

 Root password: Enter the password for the 'root', or administration account, for the MariaDB server.

Use the eye icon to toggle between displaying or masking the password entry. We recommend that the password be at least 8 characters long and contain at least one of each of the following, even though password selection strength is not enforced by the installer:

- a lower case character (a, b, c ...)
- an upper case character (A, B, C ...)
- a numeric digit (1, 2, 3 ...)
- a punctuation character (@, \$, ~ ...)

For example: "This1s@K"

Note: When updating from an earlier Connect version, the appropriate MariaDB password **must** be entered or the update will fail.

If the password is subsequently forgotten, then MariaDB must be uninstalled and its database deleted from disk before attempting to reinstall.

 Allow remote client access checkbox: Click to enable external access to the MariaDB server.

Note:

This option is required if MariaDB Server will need to be accessed from any other machine.

It will also be required if the MariaDB database is on a separate machine to this OL Connect installation.

Tip: This option may represent a security risk if the machine is open to the internet.

We heavily recommended that your firewall is set to block access to port 3306 from external requests.

- **Username**: Enter the MariaDB user name that will be associated with OL Connect. The default username for new installations is **olconnect**.
- **Password**: The password associated with the selected user.

Use the eye icon to toggle between displaying or masking the password entry. The password is not validated for password strength, so any entry is acceptable.

Ready to install

This page confirms and lists the installation selections made.

If components have been selected which have a shortcut associated with them (Designer)

then you will presented with the option to **Create desktop shortcuts**. Select if you wish for desktop icons to be created.

Click **Install** to start the installation itself. This process can take several minutes.

Installation Finished

This screen describes a summary of the components that have been installed.

• Configure update checks checkbox: This option is enabled by default. It causes the Product Update Manager to run after the installation is complete. This allows configuring OL Connect to regularly check for entitled updates.

Note: this checkbox may not be available in the event that an issue was encountered during the installation.

When ready, click the **Finish** button to close the installation wizard, and initialize the Product Update Manager, if it was selected.

The Product Update Manager

If the **Configure Update Check** option has been selected, a message will be displayed after clicking "Finish" in the setup. The message details the information that needs to be sent back to Upland Software, Inc. in order to determine when/if the software needs updating.

Click "Yes" to install or open the Product Update Manager where the frequency with which the updates can be checked and a proxy server (if required) can be specified.

Note: If the Product Update Manager was already installed by another Upland Software, Inc. application, it will be updated to the latest version and will retain the settings previously specified.

Select the desired options and then click **OK** to query the server and obtain a list of any updates that are available for your software.

- Note that the Product Update Manager can also be called from the "Objectif Lune
 Update Manager" option in the Start menu.
- It can be uninstalled via Control Panel | Programs | Programs and Features.

Product Activation

After installation, it is necessary to activate the software. See "Activating a License" on page 34 for more information.

Before activating the software, please wait 5 minutes for the database to initialize. If the software is activated and the services rebooted too quickly, the database can become corrupted and require a re-installation.

Running OL Connect installer in Silent Mode

Updating from Connect versions predating 2019.1

In order to update OL Connect to 2024.1 from Connect versions prior to 2019.1 it is first necessary to update the Connect License.

For details on how to upgrade the Connect License see "Users of OL Connect prior to 2019.1" on page 42

General information

OL Connect can be installed from the command line in "silent mode" to allow for scenarios such automated installations during company wide roll-outs, or to allow for unattended out-of-hours updates. The trigger for the Connect Installer to run in silent mode is a text file with the fixed name **installProperties.ini** located in the same folder as the OL Connect installation executable file.

How to prepare the **installProperties.ini** file is detailed in the following sections.

Installation Properties file

The basic rules for the **installProperties.ini** file are:

- Comment Lines start with the semi-colon character ';'
 Example: The options to configure an external database
- The properties are listed in Key = Value pair format.
 Example: product.ServerExtension = false
- Quotes are used for path strings, but not for other string types
 Example: path = "c:\Program Files\Objectif Lune\OL Connect"
- Property values are case insensitive

The installation settings fall into three distinct categories:

- "[Logging]" below for setting the installation logging options.
- "[Installation]" on the facing page for selecting what gets installed.
- "[Uninstall]" on page 31 handles properties related to product Uninstallation. These also impact Maintenance mode.

[Logging]

This section handles **Silent Installer** logging options.

The logging Key pairs are as follows:

• verbose: Boolean (Default: false)

A basic log is always created by the installer, with or without the verbose option. The verbose option is more suitable for debugging purpose.

If set to true, then a verbose log file is created in the logging path specified in the INI file.

If no logging path is specified in the INI file, then the default one is used. If set to false, standard logging is done.

• path: String (Default: %PROGRAMDATA%\Objectif Lune\Installation Logs)
Sets the folder to which the installation log will be written.
Only the log folder should be specified here, not the log file name.

Note: The log file name's format is set automatically and uses the format *Installer-YYYY-MM-DD-####.#.#.log*, where:

- YYYY-MM-DD = The date the log was created
- ####.#.# = The OL Connect version number

The file name for a maintenance installation begins with "Maintenance" rather than "Installer"

Example:

```
; Logging properties
[Logging]
verbose = false
path = "c:\temp\Silent Install"
```

[Installation]

This section handles various installation parameters as well as product selection.

The logging Key pairs are as follows:

• product.<name>: Boolean (Default: false)

Each OL Connect product has its own entry, which can be set to true (to install) or false (to omit from installation).

What products are available for installation is determined by which OL Connect branding is being installed. The products for OL Connect branding are as follows:

- product.Designer
- product.MariaDB
- path: String (Default: %PROGRAMFILES%\Objectif Lune\OL Connect)
 Sets the installation root folder for the OL Connect applications.
- database.configure: Boolean (Default: true)
 If set to "false", then the database configuration is skipped.

Note: If database configuration is skipped (database.configure = false), then none of the database.xxx properties below are required, and these properties will be ignored, even in they are included in the INI file.

database.system: String, Optional (Default: there is no default for this setting)
 Entry needs to be from one of the following options: mariadb, mysql, mssqlserver

Note: If product.MariaDB = true has been set:

- This setting becomes optional. Otherwise it is required.
- The value is required to be mariadb, if the value is to be provided.
- database.host: String, Optional (Default: there is no default for this setting)
 If product.MariaDB = True has been set, this value is required to be set to localhost, if provided.
- **database.port**: Numeric, Optional (Default: MariaDB's default port, 3306) The database engine port.

The required entry depends upon the selection made in database.system. If product.MariaDB = True, then the port should be set to 3306.

• database.rootpassword: String (Default: there is no default for this setting)
Database root password.

There is no default value, and if this is left unspecified the installation will fail.

- database.username: String (Default: olconnect)
 The username that OL Connect will use to connect to the database.
- database.password: String (Default: there is no default for this setting)
 The password that OL Connect will use to connect to the database.
 There is no default value, so if this is left unspecified, then the installation will fail.
- database.instance: String, Optional (Default: there is no default for this setting)
 Only valid if database.system = mssqlserver.

- database.schema: String (Default: there is no default for this setting)
 Specifies the database schema to use. Required. (Optional if product.MariaDB = true)
- database.encryptedconnection: Boolean (Default: False)

Specifies the database schema to use.

(Optional if if product.MariaDB = true)

- **server.connection.configure**: Boolean, Optional (Default: True)

 If set to False, then the server connection configuration is skipped.
- **server.connection.user**: String (Default: olc-user) The server connection username.
- **server.connection.password**: String (Default: there is no default for this setting)
 The server password. Required if server.connection.configure = true.
- **server.connection.port**: Numeric (Default: 9340) The server port number.
- desktopShortcuts: Boolean (Default: False)
 Specifies whether desktop shortcuts are to be added or not.
 This flag only takes effect if components were selected which have a shortcut associated with then (Designer). If no such were selected, then this flag will have no effect.
- Language: String, Optional
 Sets the OL Connect application language settings.
 Supported user locales (as language code) are as follows:

English: enFrench: fr

• German: de

• Italian: it

Japanese: ja

Spanish: es

Portuguese (Brazil): pt

Chinese (PRC/TW): zh

Korean: ko

• Locale: String, Optional

Sets the OL Connect application's region using a country code. For example: US, UK,

DE, CH.

If this property is not set, the locale defaults to the system locale, and if that is not found, the selected installation language will determine a default locale.

Example:

```
: Installation settings
[Installation]
product.Designer = true
product.Server = true
product.PrintManager = true
product.ServerExtension = false
product.MariaDB = true
product.Messenger = true
RegisterService.connectServer = true
server.username = Administrator
server.password = ObiLune
server.connection.user = olc-user
server.connection.password = secret
database.rootpassword = @Admin2022
database.username = olconnect
database.password = @Admin2022
database.remoteaccess = true
desktopShortcuts = true
path = "c:\Program Files\Objectif Lune\OL Connect"
Language = fr
Locale = FR
```

[Uninstall]

This section handles properties related to Uninstallation, but also Maintenance mode installations.

These options have no effect at all if OL Connect is not present on the system.

The logging Key pairs are as follows:

• remove: Boolean (Default: False)

If the present version of the installer is already installed, this property defines the installer behaviour.

The installer will perform a *Remove MSI* action on OL Connect if remove = true, whilst a *Modify MSI* action will be performed if remove = false.

Note: This option has no effect if the product is not installed on the current system

Note: If the *Remove* action is taken, then the equivalent of an uninstall is done, while a *Modify* action will change the components installed on the system based on the ones defined in the INI file [Installation] section, allowing removal or addition of components in the current installation.

• keepdata: Boolean (Default: True)

Allows the user to specify if they wish to keep or remove user data (located under %PROGRAMDATA%\Objectif Lune\OL Connect when performing a product uninstall.

Example:

```
; Uninstallation/Repair properties
[Uninstall]
remove = true
keepdata = true
```

Properties file examples

Simple Connect installation example

Here is an example of a complete **installProperties.ini** file for a relatively simple OL Connect installation.

```
; OL Connect silent installer properties
; Logging properties
[Logging]
verbose = false
path = "c:\ProgramData\Objectif Lune\Installation Logs"
Installation settings
[Installation]
product.Designer = true
product.Server = true
product.PrintManager = true
product.ServerExtension = false
product.MariaDB = true
product.Messenger = true
RegisterService.connectServer = true
server.username = Administrator
server.password = ObjLune
server.connection.user = olc-user
server.connection.password = secret
database.rootpassword = @Admin2022
database.username = olconnect
database.password = @Admin2022
database.remoteaccess = true
desktopShortcuts = true
path = "c:\Program Files\Objectif Lune\OL Connect"
:Optional uninstallation settings
[Uninstall]
keepdata = false
```

Exit Codes

Success

• 0 = Installation completed successfully / no specific error code was returned.

Pre-Installation Check (200s)

- 201: Operating system is not 64-bit
- 202: Windows Operating System is too old (pre-Windows 7)

- 203: Minimal UAC prerequisites were not met
- 204: Installation user did not have administrator rights

Silent installation properties (300s)

- 301: MariaDB product was selected, but no root password was supplied
- 302: MariaDB product was selected, but no user password was supplied
- 303: User provided database is to be used, but database.system property was missing
- 304: User provided database is to be used, but database.system property had invalid value
- 305: User provided database is to be used, but database.host property was missing.
- 306: database.instance property was used with a database system other than MS SQL Server
- 307: User provided database is to be used, but database.username property was missing.
- 308: User provided database is to be used, but database.password property was missing.
- 309: Connect server / server extension product was selected, but server.connection.password property was missing
- 310: Connect server extension product was selected, but server.connection.host property was missing

Upgrade errors (400s)

- 401: Some Connect applications were running and need to be closed before installation can proceed.
- 402: The installer brand does not match the brand of the OL Connect version currently installed. (PlanetPress)
- 403: The installer brand does not match the brand of the OL Connect version currently installed. (PReS)
- 404: The installer brand does not match the brand of the OL Connect version currently installed. (Printshop Mail)

License file validation (500s)

- 501: OL Connect license file is in older format
- 502: License Care Date does not allow installation of product
- 503: License brand mismatch with installer brand

Destination and selected product check (600s)

- 601: Server and Server Extension both were selected to be installed.
 Only one of the two may be installed on any one system.
- 602: No component was selected to be installed
- 603: Destination folder is invalid or there is too little disk space available

Installation aborted (700s)

• 701 - 725: Installation was aborted due to user cancellation

Service stop error (800s)

 801: OLConnect_MySQL/OLConnect_MariaDB service could not be stopped during uninstallation

Activating a License

OL Connect comes with a 30 day trial license period during which time it is not necessary to have a commercial license to run the application.

This allows time for reviewing the applications and for organizing a commercial license. If a modification to the trial license is required, such as to allow an extension to the trial period, or for extra functionality, then a new activation code will need to be requested.

Obtaining the OL Connect Magic Number

To obtain an activation file the OL[™] **Magic Number** must first be retrieved. The Magic Number is a machine-specific code that is generated based on the computer's hardware and software using a top-secret Upland Objectif Lune family recipe. Each physical computer or virtual computer has a different Magic Number, and each requires a separate license file to be functional.

To get the OL Connect **Magic Number** open the **OL Connect Software Activation** application.

- · Open the Start Menu
- Click on **All Programs** and browse to the **Objectif Lune** folder.
- Open the OL Connect Software Activation shortcut.

- The **OL Connect Software Activation** application consists of the following:
 - License Information subsection:
 - Magic Number: Displays the OL Connect Magic Number.
 - Copy the magic number to the clipboard: Click to copy the Magic Number to the clipboard. It can then be pasted in the activation request email using the Windows CTRL+V keyboard shortcut.
 - Licensed Products subsection:
 - **Name**: Displays the name of the application or module relevant to this activation.
 - The Information button provides detailed information about the application or module license.
 - **Serial Number**: Displays the trial license serial number or the activation serial number if the product has been activated in the past.
 - **Expiration Date**: Displays the date when the activation will expire, or the current date if the product is not activated.
 - End-User License Agreement Appears only when loading a license file:
 - **License**: This box displays the EULA. Please note that this agreement is legally binding.
 - I agree: Select to accept the EULA. This option must be selected to install the license.
 - I don't agree: Select if you do not accept the EULA. You cannot install the license if this option is selected.
 - Load License File: Click to browse to the Connect license file (.olconnectlicense), once it has been received.
 - **Install License** *Active only when a license file is Loaded*: Click to install the license and activate the software.
 - Close: Click to cancel this dialog.
 Even if a license file has been Loaded, it will not be installed if this dialog is Cancelled before the Install License button was clicked.

Requesting a license

After getting the Magic Number, a license request must be done for OL Connect:

- Customers must submit their Magic Number and serial number to Upland Objectif
 Lune via the Web Activations page: http://www.objectiflune.com/activations. The OL
 http://www.objectiflune.com/activations. The OL
 Customer Care team will then send the OL Connect license file via email.
- **Resellers** can create an evaluation license via the Upland Objectif Lune Partner Portal by following the instructions there: http://extranet.objectiflune.com/

Note that if you do not have a serial number, one will be issued to you by the OL Activations team.

Accepting the license will activate it, after which the OL Connect services will need to be restarted. Note that in some case the service may not restart on its own. To resolve this issue, restart the computer, or start the service manually from the computer's Control Panel.

Activating OL Connect

To activate OL Connect, simply save the license file somewhere on your computer where you can easily find it, such as on your desktop. You can then load the license by double-clicking on it, or through the **OL Connect Software Activation** tool.

Activating the OL Connect license requires the user to have local Windows Administration rights.

- Using a user profile that has local Windows Administration rights, open the **Start Menu**
- Click on **All Programs**, then browse to the **Objectif Lune** folder.
- Run the "OL Connect Software Activation" tool.
- Click the **Load License File** button, and browse for the .olconnectlicense file you received from Upland Software, Inc..
- Read the EULA and click the I agree option to accept it.
- Click **Install License** to activate the license. The license will then be registered on the computer and you will be able to start using the software.

Caution: After installation message will appear warning that the Server services will need to be restarted. Just click OK to proceed.

Reactivating your license

You will need to request a new license if:

The magic number has changed on the workstation the license is activated. The
magic number can change following hardware updates or updates of the operating

systems. When that happens, the software prompts you to enter a valid activation code.

• You are transferring the license to a **new workstation**.

As a customer, log in at the <u>Web Activation Manager</u> with your email address, customer ID and password to reactivate your license. For further instructions, read the Web Activation Guide (available for download from the Web Activation Manager).

If you are a reseller/partner:

- 1. Login at https://extranet.objectiflune.com/index.aspx.
- 2. Click "Reseller Licenses".
- 3. Go to the "Request an NFR" section; select the product from the drop-down list, click "Select license".
- 4. Enter the new Magic Number and click Submit. You will receive an email shortly containing your activations file.

Migrating to a new workstation

The purpose of this document is to provide a strategy for transferring a OL Connect installation to a new workstation.

Before installing the software

Before upgrading to a new version, even on a new workstation, consult the product's release notes to find out about new features, bug fixes, system requirements, known issues and much more.

OL Connect Release Notes

You should also consult the following pages for some technical considerations before installing:

- "Network considerations" on page 13
- "Database Considerations" on page 8
- "Environment considerations" on page 11
- "Installation prerequisites" on page 18
- "Antivirus Exclusions" on page 7

Downloading and installing the software

In order to migrate to a new workstation, the software must already be installed on the new workstation. Follow the "Installation and activation" on page 18 guide to download and

install the newest version of OL Connect on the new workstation.

Backing up files from the current workstation

The first step in migrating to a new workstation would be to make sure all necessary production files and resources are backed up and copied over to the new system.

Note: Although it is not necessary to convert all of your documents when upgrading to the latest version, we strongly recommended doing so.

It is considered "Best Practice" to convert the documents to the version installed.

Backing up Connect Resources

The following resources are used by Connect and can be backed up from their respective folders:

- Job Presets (.OL-jobpreset):
 - C:\Users\[UserName]\Connect\workspace\configurations\JobCreationConfig
- Output Presets (.OL-outputpreset):

C:\Users\[User-

Name]\Connect\workspace\configurations\PrinterDefinitionConfig

- OL Connect Print Manager Configuration files (.OL-ipdsprinter):
 - C:\Users\[UserName]\Connect\workspace\configurations\PrinterConfig
- OL Printer Definition Files (.OL-printerdef):

C:\Users\[User-

Name]\Connect\workspace\configurations\PrinterDefinitionConfig

• OMR Marks Configuration Files (.hcf):

C:\Users\[UserName]\Connect\workspace\configurations\HCFFiles

Where [username] is replaced by the appropriate Windows user name.

Tip: Actually, the path may not begin with 'C:\Users', as this is language-dependent. On a French system, for example, it would be 'C:\Utilisateurs'.

Type <code>%userprofile%</code> in a Windows File Explorer and press Enter to open the actual current user's home directory.

Other Resources

OL Connect Designer Templates or Package files, copied from the folder where they
reside.

- All PostScript, TrueType, Open Type and other **host based fonts** used in templates must be reinstalled on the new workstation.
- Import all **dynamic images** and make sure their paths match those in the old server.
- Make sure the new workstation can also access network or remote images, JavaScript, CSS, JSON, and HTML resources referenced in the Connect templates.

Secondary software and licenses

The following only applies to specific secondary products and licenses that interact or are integrated into the main product.

Image, Fax and Search Modules

- Reconfigure the Image and Fax outputs with the new host information.
- Import the Search Profile and rebuild the database in order to generate the database structure required by the Workflow.

OL Connect Send

- As of version 8.6 the Connect Send plugins are installed automatically with Workflow.
 If you are using an older version, run the OL Connect Send Plug-in Installer on the new Workstation to re-install the Connect Send plugins.
- Reconfigure the Server URL and port during the OL Connect Send Printer Driver setup.
- Re-run the OL Connect Send printer driver setup on client system and select the Repair option to point the clients to the new Server URL.

Configuring the Connect Engines

Any changes made to the Server preferences require the OLConnect_Server service to be restarted to take effect.

- Stop the OLConnect_Server service from Control Panel > Administrative Tools > Services > OLConnect_Server > Stop.
- 2. Configure the Merge and Weaver Engines scheduling preferences as in the previous installation
 - Open the Server Configuration from:
 C:\Program Files\Objectif Lune\OL Connect\Connect Server Configuration\ServerConfig.exe
 - Configure the DataMapper, Merge and Weaver engines preferences (see "Parallel Processing preferences" on page 53). As of version 2018.1 these preferences

include the minimum (Xms) and maximum (Xmx) memory utilization for the Merge and Weaver engines.

- Configure any other options for the Clean-up Service.
- 3. Now start the **OLConnect_Server** service

Configuring the Server Extensions

In the case where the OLConnect MySQL is installed on the new Master Server, it is important to reconnect all Server Extension systems to the new Master Server.

Perform the following action on each Server Extension:

- Stop the OLConnect_ServerExtension service from Control Panel > Administrative
 Tools > Services > OLConnect_ServerExtension > Stop.
- 2. Open the Server Extension Configuration from:

```
C:\Program Files\Objectif Lune\OL Connect\Connect Server Exten-
sion\ServerExtension.exe
```

- 3. Click on Database Connection and configure the JDBC Database connection settings so that the hostname points to the new Master Server.
- 4. Click on Scheduling and type in the location of the new Master Server.
- 5. Start the **OLConnect_ServerExtension** service.

Transferring software licenses

Once all the above resources have been transferred over to the new server, it is recommended to thoroughly test the new system - in **demo mode** - with sample files under normal production load to identify points of improvement and make sure the output matches the user's expectation.

Output generated at this point will normally bear a watermark which can be removed by transferring licenses from the old server to the new one.

- To transfer Connect and Workflow licenses, the user is usually required to complete a
 License Transfer Agreement which can be obtained from their <u>local Customer Care</u> <u>department</u>.
- If you want to transfer your licenses to the new machine right away, you may ask your <u>local Customer Care department</u> for a **30 day Transition activation** code for your *old* machine.
- Upgrades cannot be activated using the automated Activation Manager. Contact your <u>local Customer Care department</u>.

To apply the license file received from the Activation Team:

- 1. Ensure that all services are stopped on your old machine before activating and starting the services on the new machine. Attempting to run the software with the same license simultaneously will not only run into errors but it is a breach of our EULA.
- 2. Start the OL Connect Software Activation module:
 - C:\Program Files\Objectif Lune\OL Connect\Connect Software Activation\SoftwareActivation.exe
- 3. Click on Load License File to import the license.OLConnectLicense.
- 4. Start the Software Activation module on the Extension servers, where applicable.
- 5. Click on Load License File to import the above same license.OLConnectLicense.
- 6. Restart the OLConnect_Server service and restart the OLConnectServer_Extension service on the Extension servers, where applicable.
- 7. The number of Expected Remote Merge and Weaver engines should now be configurable in the Connect Server Configuration module (C:\Program Files\Objectif Lune\OL Connect\Connect Server Configuration\ServerConfig.exe)

Uninstalling OL Connect from the previous workstation

It is recommended to keep the previous install for a few days until everything is completed. However, once your transition is successful and complete, the OL Connect software must be uninstalled from the original server. See "Uninstalling" on page 64.

Upgrading

This page provides information about Upgrading to OL Connect version 2024.1.

Upgrade information is detailed in the following pages:

• "Upgrading from previous OL Connect versions" below

Upgrading from previous OL Connect versions

Users of OL Connect prior to 2022

Users of any version of OL Connect prior to 2022 should see the page "Pre-existing User Data" on page 45 for information about exactly what data is saved or deleted.

Users of OL Connect prior to 2019.1

Users of OL Connect versions prior to 2019.1 should note that **Update Client 1.2.40** is a pre-requisite for both OL Connect 2019.1 and Connect Workflow 2019.1 installations. Only Update Client 1.2.40 has the capacity to upgrade the OL Connect license to the newer format that is required by the installers of those products.

If you do not have Update Client version 1.2.40 installed already, then the next time you run your Update Client it will show that there is an update available of itself to Version 1.2.40 (or later).

Simply click on the "Install" icon 👱 to initiate the upgrade.

For further details on how to upgrade the Update Client and update your Connect License see the <u>Update Client 1.2.40 Upgrade Guide</u>.

Note: An incomplete uninstall of OL Connect before a reinstall or upgrade to a newer version can lead to issues. See "Issue after erroneous or incomplete update or reinstallation" on page 58.

Before you upgrade

Always backup before upgrading

It is recommended that you always backup your existing OL Connect preferences before upgrading to a new version. This will enable you to revert back to the previous version, in a worst case scenario in which the new version introduces issues with your existing production processes. Whilst the probability of such a worst case scenario is remote, it cannot hurt to take some simple precautions, just in case.

For instructions on how to do so, please see "Backup existing OL Connect version" on the next page.

Note: The scheduling settings were changed significantly in version 2019.2. Please make sure to record your current scheduling settings for reference before proceeding with an upgrade..

Recommendations

Before embarking on an upgrade, also follow these recommendations:

- Prior to updating your production environment, all updates to OL Connect/Workflow should be performed in a **development & test environment**. This is both to test the upgrade process and to test that your solution is still working as expected. Having a development & test environment minimizes the risk of failure and business impact.
- Planning the upgrade:
 - Perform the upgrade of your production server during off-peak hours when it least impacts business.
 - Prepare a rollback plan appropriate to your organization, which includes provisions for reverting in the case of catastrophic errors. This can be as simple as reverting to a snapshot or may be more involved on physical hardware.
 - Anticipate at least 1 hour of downtime to provide enough time for the installation and any rollback plan.
- Consult the "System requirements" on page 16 and "Installation prerequisites" on page 18 before the upgrade to ensure that your environment is supported. If not, upgrading is not recommended.
- When possible, disable your **antivirus and anti-malware** software during the upgrade process. If it is not allowed by the security policies, please consider configuring the proper exceptions:
 - "Antivirus Exclusions" on page 7 (OL Connect
 - Workflow exceptions
- Read the OL Connect Release Notes. They provide information regarding enhancements in that release version (known issues, bug fixes, enhancements, new features, etc.)

Backup existing OL Connect version

It is recommended that you always backup your existing OL Connect preferences before upgrading to a new version. This will enable you to revert back to the previous version, in a worst case scenario in which the new version introduces issues with your existing production processes. Whilst the probability of such a worst case scenario is remote, it cannot hurt to take some simple precautions, just in case.

Backing up a virtual machine

Backing up a virtual machine installation is relatively straight forward. Simply take a snap-shot of the virtual machine instance, prior to upgrading. This would save all the localized preferences and configurations.

Backing up a real machine

Backup these folders

- C:\ProgramData\Objectif Lune\OL Connect\.settings\ConnectHostScope
- C:\Users\[UserName]\Connect\filestore
- C:\Users\[UserName]\Connect\workspace\configurations
- C:\Users\[User-Name]\Connect\workspace\Designer\.metadata\.plugins\org.eclipse.core.runtime\.settings
 C:\Users\[User-

```
Name]\Con-
nec-
t\work-
space\Server\.metadata\.plugins\org.eclipse.core.runtime\.settings
```

Where [username] is replaced by the appropriate Windows user name.

Tip: Actually, the path may not begin with 'C:\Users', as this is language-dependent. On a French system, for example, it would be 'C:\Utilisateurs'.

Type <code>%userprofile%</code> in a Windows File Explorer and press Enter to open the actual current user's home directory.

Note that the installer is designed to keep these folders/files intact. Backing them up is simply a precautionary measure.

Additionally, these are only the folders that are natively managed by the installer. Back up every custom location/resource that may be important for the functionality of your solution.

Backup your database

If you want to be completely thorough and be able to exactly replicate your existing system, you should also backup your existing Connect database.

If the default (pre Connect 2022.1) MySQL database were being used as the Connect backend database, we would recommend the MySQLDump tool be used for this. See for details on this utility program: mysqldump (https://dev.mysql.-com/doc/refman/5.7/en/mysqldump.html).

Pre-existing User Data

The following scenarios display what happens to pre-existing User Data in a Connect upgrade.

Note: In regards to the MySQL (Connect version 2021.2 and earlier) or MariaDB (Connect version 2022.1 onwards) entries: these are only applicable if the OL Connect database component was installed in a previous Connect installation.

Scenario 1: Upgrading from Connect 2021.2 or earlier with Remove User Data CHECKED

- In all cases:
 - Files and folders are removed from the user data folder C:\User-s\<connectUser>\Connect , where <connectUser> is the user that installed OL Connect.
 - Files and folders are removed from the following data folders:
 - C:\ProgramData\Objectif Lune\OL Connect\.settings
 - C:\ProgramData\Objectif Lune\OL Connect\CloudLicense
 - C:\ProgramData\Objectif Lune\OL Connect\ErrorLogs
 - C:\ProgramData\Objectif Lune\OL Connect\LiquibaseUpdate
 - Files are removed from the root of the data folder C:\ProgramData\Objectif Lune\OL Connect\.
 - If the folder is empty following this (i.e. no license or user folders were present) then the C:\ProgramData\Objectif Lune\OL Connect\ folder itself is removed.
 - License files as well as any content not listed above but found in the C:\ProgramData\Objectif Lune\OL Connect\ folder remain untouched.
- Additional cases:
 - 1. If MySQL was previously installed as an OL Connect component AND the database contains some user-defined schemas:
 - The native OL Connect schema is removed from the MySQL database.
 - The MySQL database files (C:\ProgramData\Objectif Lune\OL Connect\MySQL) are kept intact, as user-defined schemas mean that the user did not have only the OL Connect native schema content in their database.

- A message at the end of the upgrade will advise the user that some non-OL schemas were found in the database, so the database files were not removed.
- 2. If MySQL was previously installed as an OL Connect component AND the database does not contain any user-defined schemas:
 - The MySQL database files (C:\ProgramData\Objectif Lune\OL Connect\MySQL) are removed entirely.

Scenario 2: Upgrading from Connect 2021.2 or earlier with Remove User Data UNCHECKED

- In all cases:
 - The user data folder C:\Users\<connectUser>\Connect (where <connectUser> is the user that installed OL Connect) is retained, untouched.
 - All the files and folders under the data folder C:\ProgramData\Objectif Lune\OL Connect remain untouched.
- If MySQL was previously installed as an OL Connect component:
 - All schemas from the MySQL database are migrated to MariaDB, allowing the user to continue using their database content normally.
 - **NOTE:** This might take some time during the installation, depending upon the size of the existing databases.
 - The MySQL database files (C:\ProgramData\Objectif Lune\OL Connect\MySQL) are also kept intact.

Scenario 3: Uninstalling Connect 2022.1 or later with Remove User Data CHECKED

- In all cases:
 - Files and folders are removed from the user data folder C:\User-s\<connectUser>\Connect , where <connectUser> is the user that installed OL Connect.
 - Files and folders are removed from the following data folders:
 - C:\ProgramData\Objectif Lune\OL Connect\.settings
 - C:\ProgramData\Objectif Lune\OL Connect\CloudLicense

- C:\ProgramData\Objectif Lune\OL Connect\ErrorLogs
- C:\ProgramData\Objectif Lune\OL Connect\LiquibaseUpdate
- Files are removed from the root of the data folder C:\ProgramData\Objectif Lune\OL Connect\.
 - If the folder is empty following this (i.e. no license or user folders were present) then the C:\ProgramData\Objectif Lune\OL Connect\ folder itself is removed.
- License files as well as any content not listed above but found in the C:\ProgramData\Objectif Lune\OL Connect\ folder remain untouched.

Additional cases:

- 1. If MariaDB was previously installed as an OL Connect component AND the database contains some user-defined schemas:
 - The native OL Connect schema is removed from the MariaDB database.
 - The MariaDB database files (C:\ProgramData\Objectif Lune\OL Connect\MariaDB) are kept intact, as user-defined schemas mean that the user did not have only the OL Connect native schema content in their database.
 - A message at the end of the upgrade will be displayed, stating some non-OL schemas were found in the database, so the database files were not removed.
- 2. If MariaDB was previously installed as an OL Connect component AND the database does not contain some user-defined schemas:
 - The MariaDB database files (C:\ProgramData\Objectif Lune\OL Connect\MariaDB) are removed entirely.

Scenario 4: Uninstalling Connect 2022.1 or later with Remove User Data UNCHECKED

- In all cases:
 - The user data folder C:\Users\<connectUser>\Connect (where <connectUser> is the user that installed OL Connect) is retained, untouched.
 - All the files and folders under the data folder C:\ProgramData\Objectif Lune\OL Connect remain untouched.
- If MariaDB was previously installed as an OL Connect component:
 - All schemas from the MariaDB database are kept, allowing the user to use those database files if they reinstall the software.

Upgrading from PReS Classic

PReS Classic and OL Connect are very different products.

Whilst OL Connect provides considerably more options for email and web output, one need not abandon existing PReS Classic print jobs. They can still be run through Connect Workflow, using the PReS Print Controls task.

Engines preferences

Background

A **DataMapper engine** extracts data from a data file. A **Merge engine** merges the template and the data to create Email and Web output, or to create an intermediary file for Printed output. The intermediary file is in turn used by a **Weaver engine** to prepare the Print output. A **Merge engine** merges the template and the data to create an intermediary file for Printed output. The intermediary file is in turn used by a **Weaver engine** to prepare the Print output.

This page appears in the Designer **Window > Preferences** dialog. It allows control over Merge and Weaver (output) engines.

Settings

Configure engine options

Tasks handled by:

Select how Connect jobs are to be processed. The choices are between:

• **Engines** (separate processes): Select to have a number of separate engines (for Merging and Weaver, as appropriate) to process jobs.

Note:

This is the best choice for production environments.

• **Connect Designer** (uses less memory): Select to have a single Connect Designer handle processing.

Note: This option should only really ever be used for low memory, non-production (testing) environments.

Number of engines

This group is only available if **Engines** were selected as the processing architecture.

• Merge Engines selection: Select the desired amount of Merge Engines.

A **DataMapper engine** extracts data from a data file. A **Merge engine** merges the template and the data to create Email and Web output, or to create an intermediary file for Printed output. The intermediary file is in turn used by a **Weaver engine** to prepare the Print output. A **Merge engine** merges the template and the data to create an intermediary file for Printed output. The intermediary file is in turn used by a **Weaver engine** to prepare the Print output.

Generally, launching a relatively high number of **Merge** engines results in better performance, because content creation is relatively time-consuming.

Note: The OL Connect installer automatically sets the number of Merge Engines based upon the machine CPUs/Processors (the number of cores) and available Memory (RAM). The default setting will likely be enough for most users.

However, virtual machines can provide an exception to this. In some virtual environments the OL Connect installer cannot accurately determine the number of logical cores actually available to the virtual machine, and will thus use a lesser number than that which could actually be supported.

You can confirm how many Merge engines are running on your machine by running Task Manager and locating the mergeengine.exe entries in your process list.

Note that there will be an extra Merge and Weaver engine in your task manager if you are running Designer.

The Merge engine is responsible for the plugins Create Print Content, Create Email Content and Create Web Content.

License restrictions only apply to the Merge engine when creating Email or Web content. They do not apply for Create Print Content. This means you are allowed to start an infinite amount of Merge engines on any given Connect Sever to run print jobs, but you will be restricted to a set number of Merge engines for your Email and HTML jobs.

Weaver Engines selection: This option is read-only in OL Connect Designer Preferences.

Select the desired amount of Weaver (Output) Engines.

A **DataMapper engine** extracts data from a data file. A **Merge engine** merges the template and the data to create Email and Web output, or to create an intermediary file for Printed output. The intermediary file is in turn used by a **Weaver engine** to prepare the Print output. A **Merge engine** merges the template and the data to create an intermediary file for Printed output. The intermediary file is in turn used by a **Weaver engine** to prepare the Print output.

Adding extra Weaver (Output) engine(s) might be useful when large Print jobs are to be run simultaneously with smaller Print jobs. However, too many running engines will

waste precious RAM and CPU cycles to idle processes, whilst too few could create a bottleneck.

Memory

Specify the maximum amount of random access memory (RAM) in megabytes that will be used per engine in order to make optimal use of the machine's memory.

The selections made here will apply to all Engines of that type.

Note: These settings only control the maximum size of the *Java heap* memory that an engine can use; the total amount of memory that will used by an engine is actually a bit higher.

Also keep in mind that the Connect Server and the operating system itself will need memory to keep running.

By default, each engine is set to use up to a predetermined amount of RAM. To make optimum use of a machine's capabilities it might be useful to increase the amount of memory that the various engines can use.

Here are some simple scenarios where you might want to increase an Engine's memory usage:

- For complex templates with a lot of pages per document, there is a chance that Merge engines will run better with more memory.
- The maximum memory usage of a Weaver engine can be relevant for jobs with heavy graphics; or for jobs that use Cut & Stack impositioning; or for jobs using particular variables that entail page buffering (see Content variables).

The options available in the **Memory** group are:

• Merge Engines (MB) selection: Select the desired amount of Merge Engine memory.

For complex templates with a lot of pages per document, there is a chance that Merge engines will run better with more memory.

Weaver Engine (MB) selection:
 Select the desired amount of Weaver (Output) Engine memory.

When running really large jobs, it often pays to increase Weaver memory allocation,

even if only for the duration of the production job(s).

The maximum memory usage of a Weaver engine can be relevant for jobs with heavy graphics; or for jobs that use Cut & Stack impositioning; or for jobs using particular variables that entail page buffering (see Content variables).

Configure merge engine options

• On the **Merge engine tab** you can set the **Template reuse limit**. Each merge engine keeps the resources of the most recently used templates open in memory, for performance reasons. The template reuse limit determines how many times those resources get reused before they are recreated. The default value is 100. A low value is more appropriate for large jobs, while a high value is more appropriate for small jobs.

Buttons

The **Engines** preferences also provides you with buttons to:

- **Restore Defaults**. This option restores the preferences to Defaults. This applies to the current Preferences page only, but not other Preferences.
- **Apply**: This option applies the settings made within the current Preferences page, but does not close the Preferences dialog.

Parallel Processing preferences

The parallel processing preferences (previously referred to as Scheduling preferences, prior to 2019.2) page provides the means to control precisely how the OL Connect Designer handles jobs that operate in parallel.

For additional information on how these preferences can enhance performance, see Engine configuration and "Performance considerations" on page 15.

Parallel Processing properties

Preset selection

Only the **Custom** setting is applicable to the Designer Preferences, so this option is always selected and the field made read-only.

Content Creation Tab

The options are:

- **Total Merge engines configured** read only display: This is a read only entry that shows the total number of Merge engines available. To change this value, you must update the Merge Engines in the "Engines preferences" on page 49 page.
- Multi tasking group:

When starting a new Content Creation task, the task will immediately commence if there is a Merge engine available. How many Merge engines to use is based on the number of records in the input data.

Select from the following options:

assumptions will not apply.

are used for a Content Creation task. It means that for every additional 'x' records in the task, an additional Merge engine will be used.

For example, with the default 100 record threshold, tasks with 1-100 records will be assigned 1 Merge engine, tasks with 101-200 get assigned 2 merge engines, tasks with 201-300 get assigned 3 merge engines, and so on.

The default of 100 records was chosen purely because it is an easily multiplied number, not because it has been proven to have any significant value. It means that on an average system (i.e., less than 10 Merge engines) any decently sized task is allowed to use all Merge engines. It also assumes that using more than one Merge engine for less than 100 records will probably not make a big enough

difference to throughput speed. Obviously, there are situations where these

• Additional engine every (records) entry: This controls how many Merge engines

Note: Currently, it's only the print and PDF content creation tasks that use multiple Merge engines.

Buttons

The Parallel Processing preferences also provides you with buttons to :

- **Restore Defaults**. This option restores the preferences to Defaults. This applies to the current Preferences page only, but not other Preferences.
- **Apply**: This option applies the settings made within the current Preferences page, but does not close the Preferences dialog.

Known Issues

This page lists important information about issues that apply to OL Connect 2024.1.

Additional Content font selection issue

The Additional Content (text and barcode) available in the Advanced Print Wizard does not support localised Chinese, Japanese and Korean (CJK) font family names, even they are available through the font selector.

This will be addressed in a future release.

Unicode Variation Selectors issue

The Designer and Merge Engine can crash when a document or input data contains a <u>Unicode Variation Selector</u>. A variation selector is a special Unicode character in the range of U+FE00 - U+FE0F that indicates which variant of the previous character should be used. The issue has so far only occurred on Windows 11 systems and will be fixed in a later release.

ODBC drivers do not all work with OL Connect

ODBC drivers do not all work with Java applications.

Since OL Connect is a Java application, it is strongly recommended you use JDBC instead.

Incorrect colors in print preview

Colors are not displayed correctly in previews generated by the Advanced Print Wizard.

Concatenating PDF files is slower

As of OL Connect 2022.1, concatenating PDF files is significantly slower than in previous versions. This is visible in the **Merge PDF Files** and **Send to Folder** plugins with the Concatenate files option enabled, and when using the **Pages.InsertFrom()** functions of the AlambicEdit script API.

This is due to upgrading to the Adobe PDF Library version 18.0.3, which has improved the reliability of the PDF merging process at the expense of speed.

Account permission issues

If you install and run OL Connect Designer under different user accounts (for example, install under *User1* and run Designer as *User2*), account permission issues may occur.

It is recommended that you install and use OL Connect Designer under the same user account.

Master Page not affected by style rules for <body>

In the output, content in Master Pages is affected by style rules targeting https://www.nct.nc... style rules targeting the <body> element. This is because in the output, they are placed outside the <body> of the section to which they are applied. When editing a Master Page, style rules targeting the <body> element will work, because the Master Page is not currently applied to a section, but they will have no effect in the output.

JDBC connection issue

In OL Connect version 2022.2, the SQL Server driver has been updated to version 10.2.0.jre11. As opposed to preceding versions, this driver by default attempts to connect to a JDBC database with encryption enabled if the *encrypt* parameter is missing from the connection string. This might break existing JDBC connections, particularly those defined in scripts and in the Database Wizard's 'Advanced Mode'.

To instruct this driver to not use encryption, the "; encrypt=false" parameter needs to be present in the connection string.

Installer issues

The new 2022.1 installer has some minor issues that will be fixed in a subsequent release. The issues are:

- After installation, the "recent files" list is cleared and the measurement units are reset from 'cm' to 'inch'.
- When updating from earlier 2022.1.x versions the bundled MariaDB connection settings are reset.

Issues running Connect on Hyper-V 9.0

Some customers have reported difficulties running OL Connect on Hyper-V version 9.0. In some instances OL Connect cannot install and in others the OL Connect Server service sometime stops with a signature error.

To resolve these issue we recommend downgrading to Hyper-V version 8.0 where these issues are not reported.

Minor font changes

As of Connect 2021.1 we no longer round fonts to pixel size. This can lead to tiny differences in the output (of 1-2 pixels) when compared to earlier versions.

Changed Omit Master Page Back behaviour

In versions of Connect prior to 2020.2, if a page had no content except for a linked DataMapper background, then Connect would consider it an "empty" page when determining whether or not to "Omit Master Page Back in case of an empty back page" (available as an option in the sheet configuration of a section). This has now been fixed in Connect 2020.2, and such pages are no longer considered empty.

This could impact on the output from existing templates.

Print Wizard Preview showing some Landscape mode jobs in Portrait mode

Print jobs featuring associated Connect Output Presets which have Imposition options set to Landscape will not **Preview** in Landscape, but rather in Portrait mode. The printout is unaffected, however.

Issues associating PDF files with Connect

Under certain circumstances, Connect Setups prior to 2019.2 would fail when attempting to add the "Enhance with Connect" association with PDF files. This would then cause the setup to appear to fail.

Whilst this issue has been fixed in the Connect 2019.2 installer, if a user had previously experienced the issue and temporarily worked around it to complete the installation, then the Connect installer will fail on upgrade or uninstallation.

To get around this, a manual uninstall is required, or a modification to registry entries.

The license update introduced in OL Connect 2019.1 does not cater for existing AFP input licenses

AFP Input is an add on option for OL Connect licenses. Unfortunately, the update to the 2019.1 version of the OL Connect license does not cater for existing AFP input licenses.

If you have an existing AFP input license we ask that you contact your <u>local Customer Care</u> <u>team</u> after the initial license update is complete and have them add the AFP input option back into your license. (See (https://www.ob-

jectiflune.com/WebActivationManager/CareInfo.aspx.)

The Update Client OL for Connect 2019.1 does not cater for standalone Connect Print Manager installations

The Connect Print Manager is a standalone Connect tool that is used in production sites to manage print jobs. It can be installed and run on standalone machines without a Connect

license.

The Update Client for Connect 2019.1 looks for a Connect license as part of the update process, but it will not find one on standalone Connect Print Manager installations. As a result the Update Client will not recognize that there is a Connect update available to the Print Manager machine.

In order to update Connect Print Manager to version 2019.1 you will need to download the Connect 2019.1 installer outside of the Update Client. The Connect 2019.1 installer can be downloaded from the Web Activation Manager site. See https://www.ob-jectiflune.com/webactivationmanager/. Or you could ask your local Administration for the installer, as it would likely already have been downloaded for installation by the document designers.

Page break changes in 2019.1

Improved page breaking in Connect 2019.1 might impact upon some existing templates. It is recommended that you check page breaking in existing jobs, where page breaks at a specific location are a known criteria.

Minor differences in AFP and IPDS output introduced in 2019.1

Connect 2019.1 now defaults to "Scale to Fit" for both **IPDS** and **AFP** output.

Please note that this may have an impact when printing pre-existing Connect jobs (made in Connect versions predating 2019.1) on older printer models that do not support "Scale to Fit".

Issue with image placement in 2019.1 when using some customized AFP and IPDS Printer Definitions

An issue with image placement in Connect 2019.1 AFP and IPDS output was discovered just prior to the release. The issue is specific to AFP and IPDS 600 DPI Printer Definitions that are not set to "Scale to Fit".

As "Scale to Fit" is now switched on by default in all standard Connect 2019.1 AFP and IPDS Printer Definitions, none of those should encounter the issue.

This issue will be fixed in a subsequent patch release.

Issue after erroneous or incomplete update or re-installation

If one or more products (the OL Connect Designer, Connect Server, Software Activation, Print Manager, or Server Configuration Tool) or engines exit within a second of starting, this may be caused by a recent erroneous or incomplete uninstall before a reinstall or upgrade to a newer version of OL Connect.

This may be solved by deleting the <code>%UserProfile%\Connect\.eclipse</code> directory.

Backend database might require periodic maintenance

Databases maintain a variety of statistics in order to optimize performance. When high levels of inserts and/or deletions occur, the statistical data keeping can struggle to keep up. Over a period of prolonged and intensive processing this can result in a degradation in performance, with the whole database slowing down as it struggles to clean itself up.

In Connect terms the effect can be felt as the Data Mapper and/or Job Creation progressively slowing down.

To cure this issue, it is recommended that you periodically run manual maintenance on the backend database.

If using MySQL, the following script should be run in a query window:

```
set @a=null,@c=null,@b=concat("show tables where",
ifnull(concat(" `Tables_in_",database(),"` like '",@c,"' and"),''),
" (@a:=concat_ws(',',@a,`Tables_in_",database(),"`))");

Prepare `bd` from @b;

EXECUTE `bd`;

DEALLOCATE PREPARE `bd`;

set @a:=concat('optimize table ',@a);

PREPARE `sql` FROM @a;

EXECUTE `sql`;

DEALLOCATE PREPARE `sql`;

set @a=null,@b=null,@c=null;
```

If using Microsoft SQL Server run the following command in a query window:

```
sp updatestats
```

Windows 10 Search service impacting Connect

The Windows 10 Search service runs as a background task, indexing files and folders. It has been noted that this background task is sometimes preventing files being added to the Connect temporary files folder when large amounts of files are being output and copied.

If this is an issue for you, we suggest disabling Search Indexing on the C:\User-s\<username>\Connect folder.

This issue will be fixed in a later release.

Job Presets: External Sorting change introduced in 2018.2

Versions prior to 2018.2 did not correctly save the line end characters for external sort configurations in Job Presets, which meant the job could not be externally sorted. This issue has been fixed in version 2018.2. However, Job Presets created with an earlier version may still have the wrong line end character for external sorting. To fix this, open the Job Preset in the new version, reset the line end setting in the sorting options and then save the preset.

Business Graphics: Backward Compatibility Issues introduced in 2018.1

As a consequence of changes in both the user interface and the underlying technology, Business Graphics made with a version prior to OL Connect 2018.1 may not display correctly when opened in version 2024.1.

The currently known backward compatibility issues are listed here:

All charts

- **Legend position**: The position of the legend is not converted. It defaults to 'left' in a converted chart.
- NOTE: Expanded custom chart scripts cannot be converted.

Pie charts

 Default colors: The default colors (used when no pie chart colors are specified) have changed.

Known Font issues

The following font(s) are known to have issues in OL Connect 2024.1:

· Benton Sans CFF font

Minor differences in PCL, AFP and IPDS output introduced in 2018.1

The browser component (Mozilla Gecko) used in the WYSIWYG editor of the Designer was updated for Connect 2018.1. This allows use of new CSS properties, such as flexbox.

However this update could lead to increased output file sizes for some PCL, AFP and IPDS jobs. This is generally not a cause for concern, however there might be some associated increase in processing times, as well as some minor differences in the output. For example, table line widths and font spacings might differ slightly (particularly for SMALL CAPS text), which could lead to slightly different word-wrapping in some circumstances.

Windows Server 2016 issue

As of OL Connect 2018.1 Connect is officially supported under Windows Server 2016.

Please note, however, that the **Update Client** application might be blocked by the enhanced security settings in Windows Server 2016.

To fix this, add http://updates.ca.objectiflune.com to the list of trusted web sites on that machine, or lower the internet access rules.

Limit of 100MB of image files within a single job

The browser component (Mozilla Gecko) used in the WYSIWYG editor of the Designer was updated for Connect 2018.1. This allows use of new CSS properties, such as flexbox.

However this update also introduced a limit of 100MBs for image files included within a single job. The limit is set at 100MB deliberately, as this allows *most* jobs to run faster. However, if a job requires more than 100MBs of image files, then the Connect image cache size can be increased to cater for such.

Please contact **OL Support** for instructions on how to modify the image memory cache value, if needed.

Print Output: Booklet Impositioning changes introduced in 2018.1

When Booklet Impositioning is enabled, all pages within a document need to be changed to duplex prior to Impositioning. The method for duplexing jobs has been changed to now always combine existing pages into the front and backsides of sheets, rather than adding empty backsides to any simplex pages.

The result is that now every document in the job becomes a booklet without any empty pages between the first page and the last page.

With some exceptions. Booklet Impositionings that require a multiple of 4 pages (*Saddle binding* and *Perfect binding*) will still get empty pages added, when needed.

Installation paths with multi-byte characters

When installing the Traditional Chinese or Japanese versions of Connect, if the user specifies an alternative installation path containing multi-byte/wide-char characters it can break some of the links to the Connect-related shortcuts in the Start Menu and cause an error to appear at the end of the installer. The workaround for the moment is to use the default installation path. The problem will be addressed in a later release.

Switching languages

Changing the language using the **Window > Preferences > Language Setting** menu option does not currently change all of the strings in the application to the selected language. This is a known issue and will be fixed in a later release.

In the meantime we offer the following workaround for anyone who needs to change the language:

- 1. Go to the .ini files for the Designer and Server Config:
 - C:\Program Files\Objectif Lune\OL Connect\Connect Designer\Designer.ini
 - C:\Program Files\Objectif Lune\OL Connect\Connect Server Configuration\ServerConfig.ini
- 2. Change the language parameter to the required one under Duser.language=en | es | de | fr | it | ja | ko | pt | tw | zh

Only one of the above language tags should be selected. Once saved, Connect will appear in the selected language at next start-up.

GoDaddy certificates

When installing Connect offline, dialogs allow installing the GoDaddy certificates. Most users should use the default settings and click **Next**. In some cases, however, this may not work correctly. For this reason those users should activate **Place all certificates in the following store** and then select the **Trusted Root Certification Authorities** as the target certificate store.

MySQL Compatibility

The minimum supported MySQL version is MySQL 5.6.

Available Printer Models

Note that only the single Printer Model (Generic PDF) will appear on the **Advanced** page of the **Print Wizard** by default.

To add additional printer models click on the settings button next to the Model selection entry box.

Color Model in Style Sheets

The color model of colors defined in a style sheet can sometimes change after editing the style sheet. This is a known issue and will be addressed in a subsequent release.

Image preview in Designer

If in the Windows Internet settings (**Connection Settings > LAN configuration**) a proxy is enabled, but "Bypass proxy settings for local addresses" is not checked, the image preview service, conversion service and live preview tab in the Designer will not work and exhibit the

following issues:

- Images will be shown as 0 size boxes (no red 'X' is displayed).
- Live preview does not progress, and when re-activated reports "browsers is busy".

To fix the issue you must check the "Bypass proxy settings for local addresses" option.

VIPP Output

Some templates set up with landscape orientation are being produced as portrait in VIPP. It can also sometimes be the case that text and images can be slightly displaced. These are known issues and will be addressed in a later release of Connect.

Magic Number changes when installing Docker

Installing Docker on a system where Connect has already been installed may impact Connect's licensing mechanism and require reactivation.

Note: Installing Connect after Docker has already been installed will not cause issues.

Uninstalling

This topic provides some important information about uninstalling (removing) OL Connect 2024.1.

To uninstall OL Connect select the application from within the Add/Remove programs option under the Control Panel. This will start the **OL Connect Setup Wizard** in uninstall mode.

Note: The **OL Connect Setup Wizard** might take some seconds to appear.

Important: Stop any active Anti-Virus software before uninstalling Connect back-end database.

Some anti-virus systems are known to block the uninstallation of MariaDB datafiles, as well as blocking the uninstallation of the MariaDB database application itself. If you wish to uninstall the Connect back-end database it is **highly recommended** that any anti-virus application be stopped prior to uninstalling OL Connect, as otherwise the Connect uninstallation might not work correctly.

Impacts upon other applications and services

- The Uninstall will terminate the installed Server / MariaDB service(s).
- The following applications / services should be stopped in a controlled fashion, before running the OL Connect Uninstall:
 - 1. OL Connect
 - 2. Connect products on remote systems which refer to this MariaDB database.

Uninstallation Wizard

The uninstallation is done by running the OL Connect Setup Wizard in uninstall mode. The Wizard contains the following important pages:

- OL Connect Setup: This page allows selection of what is to be done. An modification to
 the existing installation (Add or Remove Features) or full Uninstall.
 NOTE: If the Uninstall option is selected the Remove user data option is made available. For information about exactly what data would be saved or deleted, please see
 "Pre-existing User Data" on page 45.
- Component Selection: If Add or Remove Features was selected on previous screen, this page provides options for adding or removing Connect features.
 For detail descriptions of the options, see Installation "Component Selection" on page 22.

Legal Notices and Acknowledgments

Warning: OL Connect is protected by copyright law and international treaties. Unauthorized reproduction or distribution of this program, via any means, in part or in whole, may be prosecuted to the full extent of the law.

The license agreements for the associated open source third party components can be found in the following installation folder: C:\Program Files\Objectif Lune\OL Connect\Legal Notices

This application uses the following third party components:

- Adobe PDF Library which is either a registered trademark or trademark of Adobe Systems Incorporated in the United States and\or other countries.
- Adobe XMP Core Copyright © 1999 2010, Adobe Systems Incorporated. All rights reserved.
- ASM librares which are distributed under a BSD 3-clause License
- Bouncy Castle which is distributed under an MIT license (MIT License)
- **c3p0** which is licensed under the terms of the Lesser General Public License (LGPL) Version 2.1. The source code can be obtained from the following location: https://github.com/swaldman/c3p0
- **Dart Sass**, which is available for use and modification under the MIT license (<u>MIT License</u>).
- **DD Plist** which is distributed under an MIT license (MIT License)
- **Eclipse Gemini Blueprint** which is distributed under the terms of the Apache Software License Version 2.0. This product includes sub-components with separate copyright notices and license terms.
- **Eclipse Nebula** This application also uses the following Eclipse Nebula components which are distributed under the terms of the **Eclipse Public License (EPL) v 2.0**:
 - Radiogroup Widgets
- Eclipse Persistence Services Project (EclipseLink), Copyright © 2007, Eclipse Foundation, Inc. and its licensors. All rights reserved. This is distributed under the terms of the Eclipse Public License Version 1.0 and Eclipse Distribution License Version 1.0.
- **Fugue Icons** by <u>Yusuke Kamiyamane</u> which are distributed under the terms of the Creative Commons Attribution 3.0 License.

• **Gecko** which is distributed under the terms of the Mozilla Public License (MPL) Version 2.0. Information on obtaining Gecko can be found on the following page: https://wiki.-mozilla.org/Gecko:Getting_Started

NOTE: This library has been modified for Connect. To obtain copies of the modified library please contact your local Objective Lune Support team.

- Glassfish This application also uses the following Glassfish components which are distributed under the terms of the Eclipse Public License (EPL) v 2.0:
 - HK2 API module
 - HK2 Implementation Utilities
 - Javax Inject
 - Jersey
 - Jersey Bean Validation
 - Jersey Container Jetty HTTP
 - Jersey Container Servlet
 - Jersey Container Servlet Core
 - OSGi Resource Locator
 - ServiceLocator Default Implementation

Information on how to download the Glassfish project sources can be obtained from here: https://mvnrepository.com/search?q=org.glassfish

- Glassfish Java Mail which is licensed under the terms of the Common Development and Distribution License (CDDL) Version 1.0. Information on how to download the Glassfish source can be obtained from here: https://wi-kis.oracle.com/display/GlassFish/Java+EE+7+Maven+Coordinates
- Google Core Protocol Buffers library which is distributed under a BSD 3-clause License
- Hamcrest Matchers Copyright @ 2000-2006, www.hamcrest.org. All rights reserved.
- HyperSQL, Copyright © 2001-2010, The HSQL Development Group. All rights reserved.
- IcoMoon. Connect uses unmodified icons from IcoMoon (https://icomoon.io/#icons-icomoon) which have been made available under the Creative Commons By 4.0 license (https://creativecommons.org/licenses/by/4.0).

- **ICU4J 4.4.2** Copyright © 1995-2013 International Business Machines Corporation and others. All rights reserved.
- J2V8 which is distributed under the terms of the Eclipse Public License (EPL) Version
 1.0. The source code for J2V8 can be obtained from the following location: https://github.com/eclipsesource/j2v8
- Jacob Java Com Bridge which is licensed under the terms of the GNU Lesser General Public License (LGPL) Version 2. The source code for this can be obtained from the following location: http://sourceforge.net/projects/jacob-project/files/jacob-project/
- Java Advanced Imaging Image I/O Tools which is distributed under a BSD 2-clause License (BSD-2-Clause license)
- JavaSysMon Copyright © 2009 ThoughtWorks, Inc. All rights reserved.
- Java XmlHttpRequest which is licensed under the terms of the GNU Lesser General Public License Version (LGPL) 2.1. The source code for this can be obtained from the following location: https://github.com/objectifluneCA/java-XmlHttpRequest
- JavaX EJB API which is distributed under the terms of the Common Development and
 Distribution License (CDDL) Version 1.0. The source code for this can be obtained from
 the following location: https://mvnrepository.com/artifact/javax.ejb/javax.ejb-api/3.2.2
- JavaX Expression Language which is distributed under the terms of the Common
 Development and Distribution License (CDDL) Version 1.0. The source code for this can
 be obtained from the following location: https://m-vnrepository.com/artifact/org.glassfish/javax.el
- JavaX interceptor API which is distributed under the terms of the Common Development and Distribution License (CDDL) Version 1.0. The source code for this can be obtained from the following location: https://m-vnrepository.com/artifact/javax.interceptor/javax.interceptor-api/1.2.2
- JavaX Mail which is distributed under the terms of the Common Development and Distribution License (CDDL) Version 1.1. The source code for this can be obtained from the following location: https://java.net/projects/javamail/downloads/directory/source
- JavaX Management J2EE API which is distributed under the terms of the Common
 Development and Distribution License (CDDL) Version 1.0. The source code for this can
 be obtained from the following location: https://m-vnrepository.com/artifact/javax.management.j2ee/javax.management.j2ee-api/1.1.2
- JavaX Resource API which is distributed under the terms of the Common Development and Distribution License (CDDL) Version 1.0. The source code for this can be

obtained from the following location: https://m-vnrepository.com/artifact/javax.resource-api/1.7.1

- JavaX Servlet API which is distributed under the terms of the Common Development and Distribution License (CDDL) Version 1.0. The source code for this can be obtained from the following location: https://m-vnrepository.com/artifact/javax.servlet/javax.servlet-api/3.1.0
- JavaX Transaction API which is distributed under the terms of the Common Development and Distribution License (CDDL) Version 1.0. The source code for this can be obtained from the following location: https://m-vnrepository.com/artifact/javax.transaction/javax.transaction-api/1.3
- JavaX WS RS API which is distributed under the terms of the Eclipse Public License v 2.0 (EPL2). The source code for this can be obtained from the following location: https://mvnrepository.com/artifact/javax.ws.rs/javax.ws.rs-api/2.1.1
- Jaxb API which is licensed under the terms of the Common Development and Distribution License (CDDL) Version 1.1. The source code can be found at the following location: https://mvnrepository.com/artifact/javax.xml.bind/jaxb-api
- **Jaxb OSGI** which is licensed under the terms of the Common Development and Distribution License (CDDL) Version 1.1. The source code can be found at the following location:

https://bit-

bucket.org/uplandsoftware/vendor/src/master/java/github.com/javaee/jaxb-v2/

- **JBCrypt** library which is distributed under the ISC License (ISC)
- Jersey which is distributed under the terms of the Common Development and Distribution License (CDDL) Version 1.1. Information on how to obtain the source code can be found at the following location: http://repo1.maven.or-g/maven2/org/glassfish/jersey/jersey-bom
- **jersey-json-1.13** which is licensed under the terms of the Common Development and Distribution License (CDDL) Version 1.1. Information on how to obtain the source code can be found at the following location: http://m-vnrepository.com/artifact/com.sun.jersey/jersey-json/1.13-b01
- Jersey Multipart which is distributed under the terms of the Common Development and Distribution License (CDDL) Version 1.1. Information on how to obtain the source code can be found at the following location: http://repo1.maven.or-g/maven2/org/glassfish/jersey/jersey-bom

- **JNA Version 3.5.1** which is distributed under the terms of the GNU Lesser General Public License Version (LGPL) 2.1. The source code for this can be obtained from the following location: https://github.com/twall/jna/releases
- jQuery library which is distributed under an MIT license (https://jquery.org/license/).
- **jQuery validation library** which is distributed under an MIT license (<u>JQuery Validation</u> licence).
- Logback which is distributed under the terms of the Eclipse Public License
 (EPL) Version 1.0. The source code for Logback can be obtained from the following location: https://logback.gos.ch/download.html
- MariaDB which is distributed under the terms of the GNU General Public License Version 2. Information on how to obtain the source code can be found at the following location: https://mariadb.org/get-involved/getting-started-for-developers/get-code-build-test/
- MariaDB Java Client which is distributed under the terms of the GNU Lesser General Public License Version (LGPL) 2.1. The source code for this can be obtained from the following location: https://mvnrepository.com/artifact/org.mariadb.jdbc/mariadb-java-client
- Mchange Commons Java which is licensed under the terms of the Lesser General Public License (LGPL) Version 2.1. The source code can be obtained from the following location: https://mvnrepository.com/artifact/com.mchange/mchange-commons-java
- Minimatch Java which is distributed under an MIT license (MIT License).
- Objectweb ASM, Copyright © 2000-2011 INRIA, France Telecom. All rights reserved.
- **Oracle JDBC Driver** which is licensed by the Oracle Free Use Terms and Conditions (FUTC) licence.
- org.eclipse.equinox.weaving.springweaver which is distributed under the terms of the Eclipse Public License (EPL) Version 1.0. The source code can be obtained from the following location: https://github.com/osgi-forks/dynaresume
- PDF Renderer which is licensed under the terms of the Lesser General Public License (LGPL) Version 2.1. The source code can be obtained from the following location: https://mvnrepository.com/artifact/pdf-renderer/pdf-renderer
- Polyfills which is licensed under the <u>Unlicense</u> license. The source code can be obtained from the following location: https://github.com/inexorabletash/polyfill.
- RapidJSON which is distributed under an MIT license.

- Relique CSV Driver which is licensed under the terms of the Lesser General Public License (LGPL) Version 2.1. The source code can be obtained from the following location: https://sourceforge.net/p/csvjdbc/code/ci/csvjdbc-1.0.31/tree/
- Rhino 1.7R4 and 1.7.7.1 which are licensed under the terms of the Mozilla Public License (MPL) Version 2.0. The source code for these can be obtained from the following location: https://developer.mozilla.org/en-US/docs/Mozilla/Projects/Rhino/Download_Rhino
- **SASS Embedded libraries**, which are made available for use and modification under the MIT license (MIT License).
- **Saxon** which is distributed under the terms of the Mozilla Public License (MPL) Version 2.0. The source code for this can be obtained from the following location: http://sourceforge.net/projects/saxon/files/Saxon-HE/9.6/
- Servlet API developed by Sun as part of the Glassfish project and licensed under the terms of the Common Development and Distribution License (CDDL) Version 1.0.
 Information on how to download the Glassfish source (as part of Java EE platform) can be obtained from here: https://wi-kis.oracle.com/display/GlassFish/Java+EE+7+Maven+Coordinates
- Simple Logging Facade for Java (SLF4J) Copyright © 2004-2017 QOS.ch. All rights reserved.
- SpotBugs Annotations which is licensed under the terms of the GNU Lesser General Public License (LGPL) Version 2.1. The source code for this can be obtained from the following location: https://github.com/spotbugs/spotbugs
- **Spring Framework** which is distributed under the terms of the Apache Software License Version 2.0. This product includes sub-components with separate copyright notices and license terms.
- StAX Utilities Copyright © 2007, StAX Utilities Project. All rights reserved.
- Stax2 API Copyright 2010-2018 FasterXML.com.
- Tern which is distributed under the terms of the Eclipse Public License (EPL) Version
 1.0. The source code for tern can be obtained from the following location: https://github.com/angelozerr/tern.java
- Web Services Description Language for Java which is distributed under the terms of the Common Public License v 1.0. The source code for this can be obtained from the following location: http://wsdl4j.cvs.sourceforge.net/viewvc/wsdl4j/
- XStream Core library which is distributed under a BSD 3-clause License

- **XULRunner** which is distributed under the terms of the Mozilla Public License Version 2.0. The source code for this can be obtained from the following location: http://ft-p.mozilla.org/pub/mozilla.org/xulrunner/releases/latest/source/
- **zziplib** which is licensed under the terms of the Mozilla Public License (MPL) Version 1.1. The source code for this can be obtained from the following location: http://sourceforge.net/projects/zziplib/files/zziplib13/

Portions of certain libraries included in this application which are distributed under the terms of the **Mozilla Public License** have been modified. To obtain copies of the modified libraries please contact your local Objective Lune Support team.

Apache Software License Components

This application also uses the following components which are distributed under the terms of the **Apache Software License Version 2.0**:

- Apache ActiveMQ
- Apache Aries
- Apache Batik
- Apache Commons Beanutils
- Apache Commons CLI
- Apache Commons Codec
- Apache Commons Collections
- Apache Commons Compress
- Apache Commons DBCP
- Apache Commons Digester
- Apache Commons Imaging
- Apache Commons IO
- Apache Commons JCS Core
- Apache Commons Lang
- Apache Commons Logging
- Apache Commons Math
- Apache Commons Pool
- Apache Commons Text
- Apache Commons Validator

- Apache Felix and dependencies
- Apache Geronimo
- Apache HttpClient
- Apache HttpClient Mime
- Apache HttpClient Windows features
- Apache HttpComponents Core HTTP/1.1
- Apache HttpComponents Core HTTP/2
- Apache HttpCore
- Apache Log4j API
- Apache Log4j to SLF4J
- Apache POI
- Apache ServiceMix
- Apache Tika Core
- Apache Tika Standard Parser
- Apache Xerces2 Java Parser
- Apache XML Graphics
- Apache XML Beans
- ASN1bean
- Barcode4j
- Google Collections
- Google GSON
- Google Guava
- Hibernate Validator
- Jackcess
- Jackson JSON processor
- JCIP Annotations
- JDBI
- JetBrains Java Annotations
- Jetty

- Jetty alpn client
- Jetty webapp
- Jetty Websocket
- Jetty Websocket API
- JSON Path
- JSON Sanitizer
- JSON Small and Fast Parser
- Kotlin Common Standard Library
- Kotlin Standard Library for JVM
- Liquibase
- LMAX Disruptor
- Minidev
- Nimbus JOSE+JWT
- Objenesis
- OkHttp
- OklO
- OpenCSV
- OpenTelemetry for Java
- OpenTelemetry Instrumentation for Java
- OPS4J Pax Web
- org.eclipse.persistence.logging.slf4j
- org.json.simple
- OSGI
- PAC4J
- Quartz Scheduler
- Sisyphsu DateParser
- Sisyphsu Retree
- Snakeyaml
- SNMP4J

- SparseBitSet
- Spring Dynamic Modules
- Swagger
- Tika
- UCanAccess
- Woodstox
- xalan
- XML Resolver

Eclipse Technology:

This Software includes unmodified Eclipse re-distributables, which are available at www.e-clipse.org. The Eclipse re-distributables are distributed under the terms of the Eclipse Public License - v 1.0 that can be found at https://www.eclipse.org/legal/epl-v10.html.

Eclipse Adoptium OpenJDK

This application uses unmodified re-distributables from the Eclipse Adoptium OpenJDK project. The Licenses used in that project are:

- Build scripts and other code to produce the binaries, the website and other build infrastructure are licensed under Apache License, Version 2.0.
- OpenJDK code itself is licensed under GPL v2 with Classpath Exception (GPLv2+CE).
- Eclipse OpenJ9 is licensed under Several licenses.

Further Components:

- Portions of this software are copyrighted by The FreeType Project (<u>www.freetype.org</u>).
 All rights reserved.
- This product includes software developed by **JSON.org** (https://www.json.org), which is distributed under the JSON License (JSON License)
- This product includes software developed by the Indiana University Extreme! Lab. For further information please visit http://www.extreme.indiana.edu/