PERFECT**XL**

Installation & configuration manual

PerfectXL Explore | PerfectXL Compare | PerfectXL Risk Finder

v1.0
22/06/2021

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Quick installation guide

This guide is intended for system administrators to quickly deploy PerfectXL standalone tools. In this set-up, every client machine automatically activates on first run based on configuration provided with the installation. As an example, the steps below represent the installation of the tool *PerfectXL Explore*; the name and version of executables and paths may vary based on the tool you install.

1. Deploy and run the installer **PerfectXL-Explore-1.0.3.exe**.
2. Deploy a configuration file to users: **%AppData% \PerfectXL Explore\config\appsettings.json**
3. Make sure to have a **license.txt** file ready with the activation key for the tool to install. (PerfectXL usually provides this file.)
4. Deploy license file to the client machine (**%AppData% \PerfectXL Explore\config\license.txt**) or some network location (**\\SRV1\PerfectXL Explore\license.txt**).
5. Set up the **appsettings.json** with the configuration provided on the left. Make sure to have the `ActivationKeyFile` point to the location of the **license.txt** file. Also note that JSON configuration requires backslash characters to be escaped (every \ becomes \\).
6. Repeat steps 1-5 for every tool. You're all set!

appsettings.json:

```
{
  "Application": {
    "EnableAutoUpdate": false
  },
  "Licensing": {
    "ActivationMethod": "Automatic",
    "ActivationKeyFile": "\\\\SRV\\license.txt"
  }
}
```

Installation overview

PerfectXL tools

PerfectXL standalone tools are Windows programs that run without the assistence of an external server. These tools can be installed individually or they can be packaged & deployed to users within larger organisations.

Installation using the installation wizard

Run the PerfectXL executable of the tool you wish to install. You can either install in user space or at system level (requires admin privileges). Next, choose the installation location and let the installer run its course.

Installation from the command prompt

PerfectXL standalone tools may also be installed via the command prompt. Use the following options to control installation behaviour:

- **/S**
  Silent install. No dialog boxes, but error messages are still displayed.
- **/allusers** or **/currentuser**
  Installation per machine or per user. An all-users installation will copy its files to `%ProgramFiles%\PerfectXL Explore`, an installation

for the current user copies its files to `%LocalAppData%\PerfectXL Explore`. ("PerfectXL Explore" is the name of the tool—obviously this varies from tool to tool).

Example:

`\\SRV\dist\PerfectXL-Explore-1.0.3.exe /S /allusers`

> Note: The installer must be started with administrative privileges in order to install with the `/allusers` option.

> In previous versions of PerfectXL standalone tools, the activation key could be provided as installation argument. This behaviour has changed to give administrators finer control over deployment and to ensure a smoother transition when the software updates or the license changes. See *Licensing overview* for how to set up licensing.

Configuration

By default, tools are installed under the assumption they are running in a consumer environment, in which end users activate their license using the built-in PerfectXL License Manager. Within organisations it is often desirable to

manage the activation automatically, which can be configured in various ways (see *Automatic activation* for details). Subtle variations in logging destination and analysis timeouts may also need to be tweaked under some circumstances.

All configuration settings, license-related or otherwise, are provided in JSON format in a file called **appsettings.json**, which should be shipped with every installation under `%AppData%\`*tool*`\config\appsettings.json`. (The config folder may need to be created first time). All settings are optional; defaults are used when settings are omitted.

› Example: PerfectXL Explore was installed in user space. The installation is located at `C:\Users\`*username*`\AppData\Local\Programs\PerfectXL Explore` and configuration is placed in the the file `C:\Users\`*username*`\AppData\Roaming\PerfectXL Explore\config\`**appsettings.json**.

› An example configuration file with every possible setting is listed at the end (see *All configuration options*). The rest of this manual is dedicated to explaining its usage.

Logging
Errors and other messages are logged to a user's *AppData* folder. This path can be changed with the following configuration:

```
{
  "Logging": {
    "File": {
      "Path": "custom\\path\\to\\PerfectXL.Explore.log"
    }
  }
}
```

› Make note of the double backslash (\\) when specifying path separators in a JSON format.

Automatic updates
By default, tools automatically check if newer versions are available. When a new version is detected, it prompts the user to install it. It is common within an organisation that tools are packaged and deployed from a central location, restricting end users from performing installations themselves. In this scenario, automatic update checks can be disabled using the following configuration:

```
{
  "Application": {
    "EnableAutoUpdate": false
  }
}
```

Using standalone tools

All tools run fully offline for spreadsheet-related operations. Thus, spreadsheets never leave the company premises. However, an internet connection is required at least once for license activation in case of automatic activation. To see how licensing works, see *Licensing overview*.

Licensing overview

Activation key

Every product ships with an *activation key*, a token generated by PerfectXL which permits the use of tool for a certain number of users in a given time period. Every tool has its own activation key (e.g. one for PerfectXL Explore and one for PerfectXL Compare).

Activation & validation

Licensing of PerfectXL standalone tools involves two steps: *activation* and *validation*. *Activation* is a one-time process to grant a user access to a tool; *validation* simply refers to the regular check to see if the license is still valid (e.g. if the expiry date has been passed). Thus, a license for 100 users can only be activated 100 times, but tools may validate regularly.

› Activation requires an exchange of details with the PerfectXL License Server. This can either be done manually or it can be automated for easy deployment.

› Validation happens automatically and in the background. It falls back to an offline check if the license server is unavailable. So, once activated, an internet connection is not required to keep using a tool.

Computer keys

Each activation generates a *computer key*. Unlike the activation key, a computer key is unique to an instance running the tool. The purpose of this key is to ensure clients can validate the license even when not connected to the internet. However, since only the PerfectXL License Server can generate computer keys, a one-time internet connection is required for activation. (Offline activation is possible by hand, see *Offline activation*.)

› By default, computer keys are stored in `C:\ProgramData\<tool>\license.txt`. Other options are available, such as storing it in user space or in registry keys. See *License storage* for details.

› To uniquely identify each instance running a tool, the computer name is used by default. In case the computer name cannot reliably identify a user (e.g. in some virtual environments), the identification can be set to something else, such as the currently logged in Windows user. See *License binding* for details.

Manual vs. automatic activation

With *manual activation*, each individual user activates his or her own installation of a tool. All PerfectXL tools ship with the built-in PerfectXL License Manager to aid this process.

For larger organisations, it is often desirable to automate the activation process. When *automatic activation* is enabled, every instance of a tool automatically runs the activation the first time it is opened. For a detailed explaination along with example configurations, see *Automatic activation*.

Offline activation

With manual activation, it is possible to activate a machine that is completely offline. In this case, exchange with the PerfectXL License Server happens by hand: using a smartphone to scan a QR code or by entering details manually on another (internet-connected) machine. For details, see *Option 3: Manual activation (offline)*.

Fully offline activation is not available when automatic activation is used. However, there are workarounds to allow clients with restricted internet access to reach the PerfectXL License Server, see *Option 4: Automatic activation using proxy-settings* and *Option 5: Automatic activation using a Gateway-server*.

Automatic activation

Enabling automatic activation

Enabling automatic activation is simple:

1. Make the activation key available to all users, such as on a network share;
2. Specify where each instance must locate the activation key;
3. Configure every instance to activate on initial startup;

See the basic configuration on the right. For more specific scenarios, see the options at the end of this manual.

```
{
  "Licensing": {
    "ActivationMethod": "Automatic",
    "ActivationKeyFile": "\\\\SRV\\license.txt"
  }
}
```

License storage

Upon activation, a computer key is stored for every instance running a tool. How this key is stored is defined by the LicenseStorage behaviour.

There are four options:

```
{
  "Licensing": {
    "LicenseStorage": "CommonData"
  }
}
```

"CommonData" (default)	*C:\ProgramData**tool**\license.txt*
"FilePerUser"	*C:\Users**username**\AppData\Roaming\IsolatedStorage\Url.moo312kluvmv2hkifitwt01jzcizwyeg\AssemFiles\\{**GUID**}*
"FilePerMachine"	*C:\ProgramData\IsolatedStorage\uooghqht.woq\pyl0u3j2.whg\Url.moo312kluvmv2hkifitwt01jzcizwyeg\AssemFiles\\{**GUID**}*
"Registry"	*HKEY_CURRENT_USER\SOFTWARE\Classes\CLSID\\{**GUID**}*

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License binding

To successfully activate a tool, every *computer key* must be generated based on an identification that is:
- unique to every user;
- always the same for a given user;

By default, the computer name is assumed, but this can be configured using `LicenseBinding` (see right).

There are two options:

"ComputerName" (default)	*Uses the **ComputerName**.*
"LoggedInUser"	*Uses the currently logged in **Windows user**.*

```
{
    "Licensing": {
        "LicenseBinding": "ComputerName"
    }
}
```

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License management

Viewing activations

To see which users have activated within you organisation, please follow these steps:

1. Visit https://license.perfectxl.com;
2. Click **Get License Information**
3. Enter your activation key and hit **OK**
4. A list of activated users appear

Deactivating users

To deactivate your license, you can use the PerfectXL License Manager built into every tool (**FIle** > **Manage license**). Click **Deactivate your license**, then click **Deactivate**.

To deactivate users within an organisation, especially if automatic activation is enabled, a system administrator can follow these steps:

1. To deactivate users, you must know the Computer ID by which they are identified. To find out the exact identification string, follow the steps in *Viewing activations* and make note of the **Computer Identifiers** of the users you wish to deactivate.
2. Return to the main page on https://license.perfectxl.com;
3. Click **Deactivate a license**;
4. Enter the activation key and computer ID and click **Deactivate**;
5. Repeat 3-4 for every user whose activation you wish to revoke;

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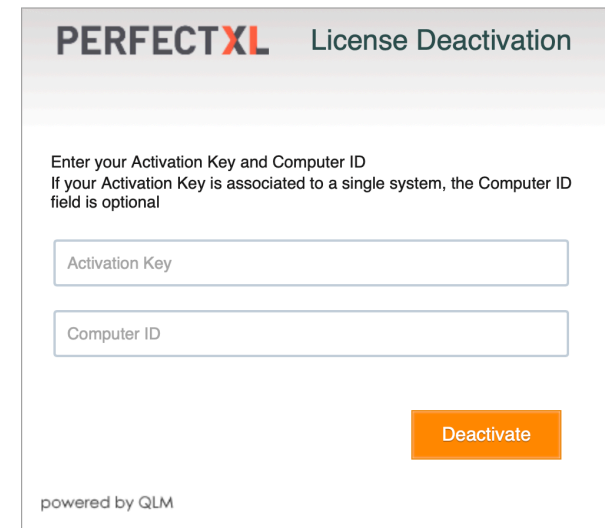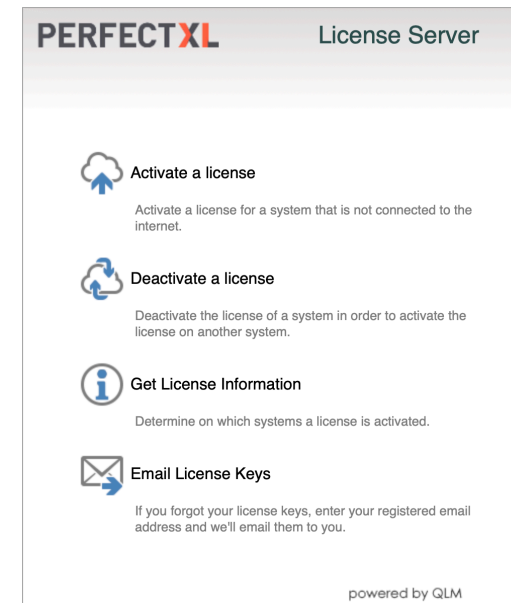
Example configurations

On the next few pages you can find example configuration for common set ups. Options 1-2 assume client machines have full, unrestricted internet access (no authenticated proxy-servers, firewalls, etc.). Options 3-5 provide possibilities for tools to activate when internet connectivity either isn't present or limited in some way.

Internet access

Option 1: Manual activation   ❯ *View*
Option 2: Automatic activation   ❯ *View*

Internet access is restricted

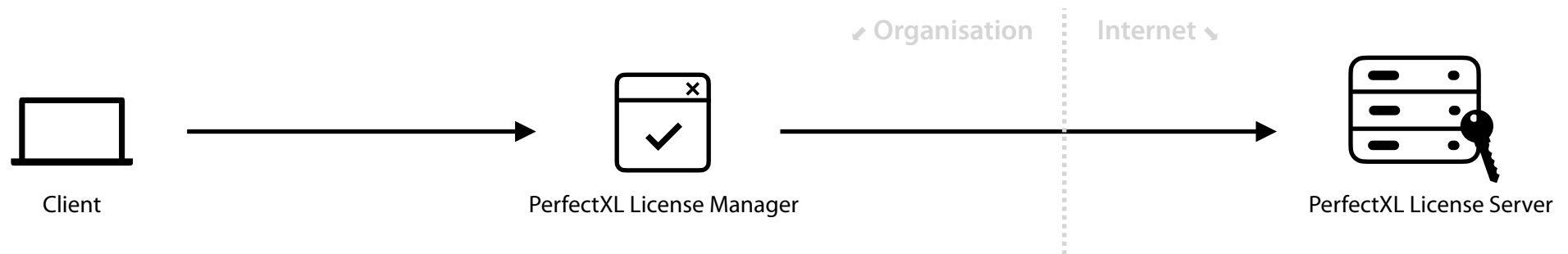*Option 3: Manual activation (offline)*   ❯ *View*
Option 4: Automatic activation using proxy-settings   ❯ *View*
*Option 5: Automatic activation using a Gateway-server*   ❯ *View*

Option 1: Manual activation

Client   PerfectXL License Manager   PerfectXL License Server

For simple installations, manually activating the tool using the built-in PerfectXL License Manager is the most straightforward way to set up licensing. When you first open the tool, it'll recognise the absence of a valid license and show a button to open the license manager.

1. Click **Manage license**;
2. In the license manager, choose **Activate your license**;
3. Next, click **Activate Online**;
4. Enter your activation key;
5. Click **Activate**;
6. Click **Finish** to close the PerfectXL License Manager. You're all set!

Option 2: Automatic activation

License Key file
(e.g. on network share)

Client
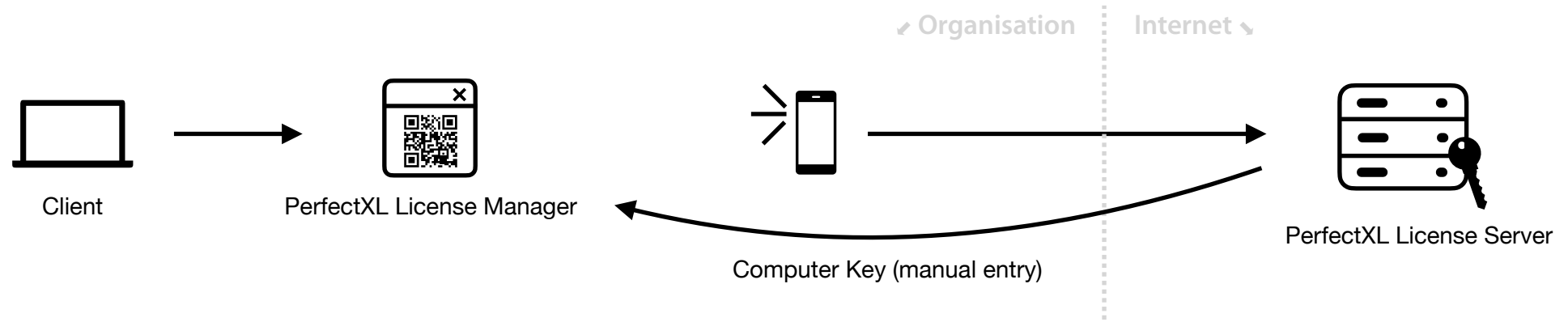
PerfectXL License Server
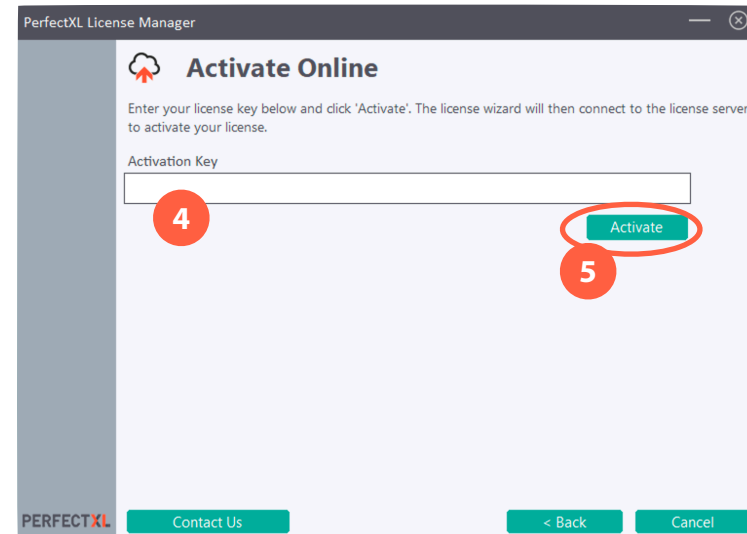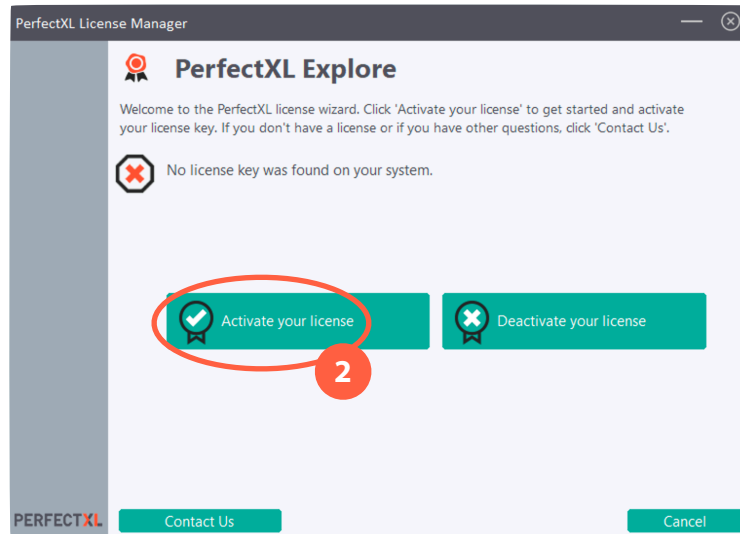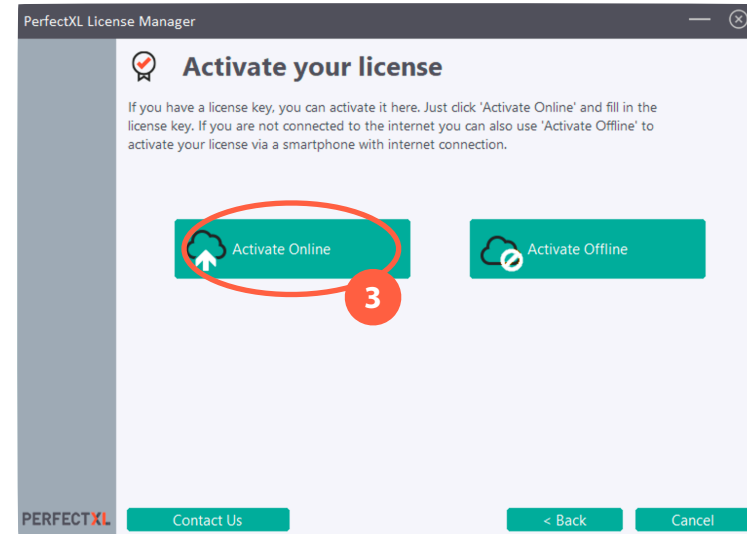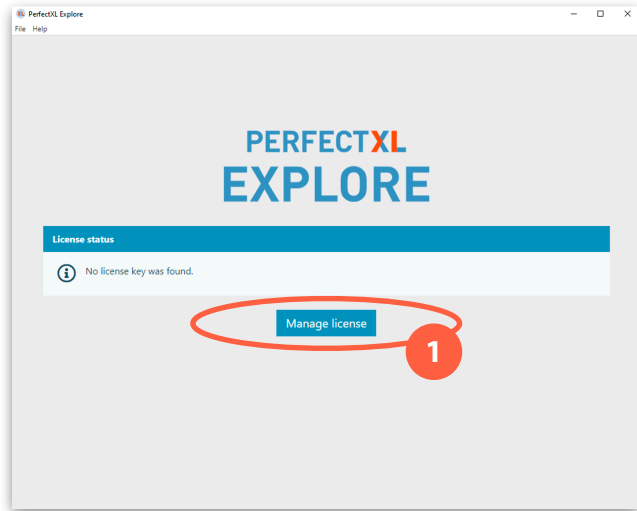
When deploying to multiple users, it is easiest to have tools automatically activate on first run. This can be enabled by configuring the **appsettings.json**-file to include the following:

```
{
    "Licensing": {
        "ActivationMethod": "Automatic",
        "ActivationKeyFile": "path\\to\\license.txt"
    }
}
```

The `ActivationKeyFile` must point to the license file provided by PerfectXL, either on a shared location or to a copy of the license file deployed to every user (note that creating copies may complicate license renewal). Thus, the location can either be on the client machine (full path, i.e. starting with `C:\\...`) or on a network share (`\\\\SRV1\\...`).

› Note: double backslashes (\\) are required for path separators in a JSON configuration file (see example). Thus, a network path must start with four backslashes.

› If an activation key file is deployed to every installation folder, you can use `%InstallDir%` to point to the installation folder.

› If an activation key file is deployed to every user's *AppData* folder, you can use `%AppData%` to point the respective location.

› Examples of ActivationKeyFile paths are provided at the end of this manual.

Option 3: Manual activation (offline)

Client   PerfectXL License Manager   PerfectXL License Server

Computer Key (manual entry)

When a machine has no ability to contact the PerfectXL License Server, for instance when the client computer is fully disconnected from the internet, manual activation is possible using the PerfectXL License Manager. When you first open the tool, it'll recognise the absence of a valid license and show a button to open the license manager.

1. Click **Manage license**;
2. In the license manager, choose **Activate your license**;
3. Next, click **Activate Offline**;
4. Enter your activation key;
5. Do one of the following:
   - Click **Scan QR Code**, scan the code with your smartphone, and manually enter the computer key that appears onscreen.
   - Visit https://license.perfectxl.com/ , click **Activate a license** and enter your activation key, product and computer ID[1]. Then, after clicking **Activate**, manually enter the resulting computer key in the PerfectXL License Manager.
5. Click **Activate**;
6. Click **Finish** to close the PerfectXL License Manager. You're all set!

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[1] This should be the unique identifier as specified by the `LicenseBinding` option in **appsettings.json**. Usually this is your computer name.
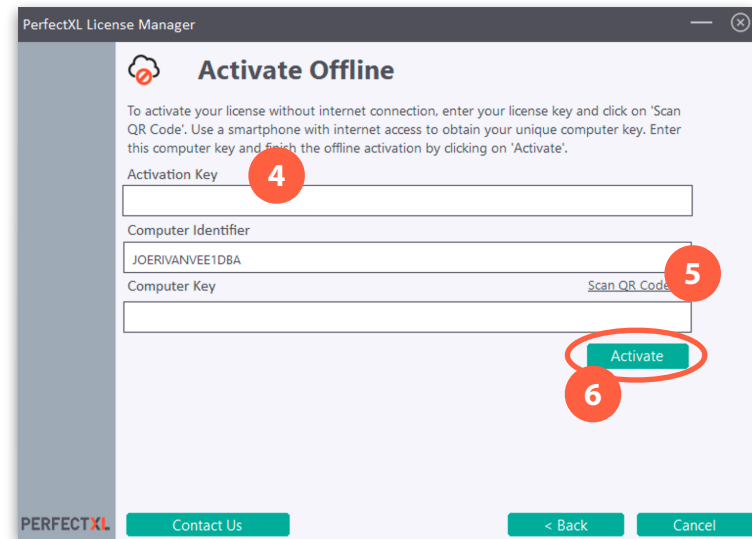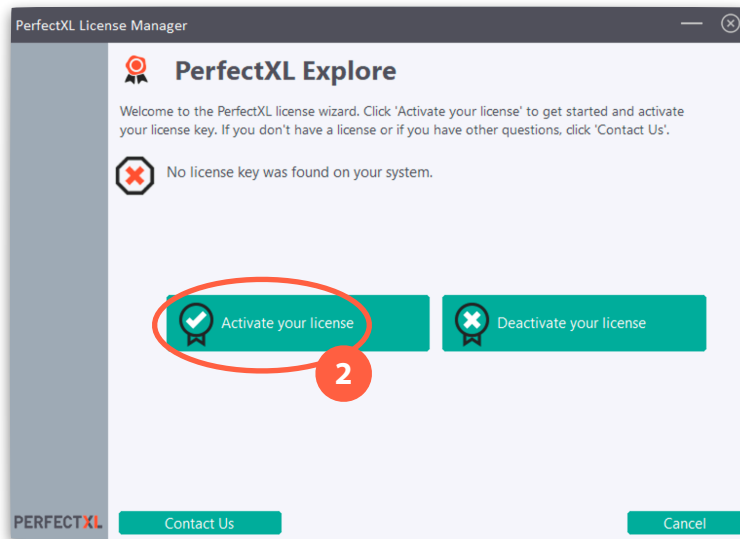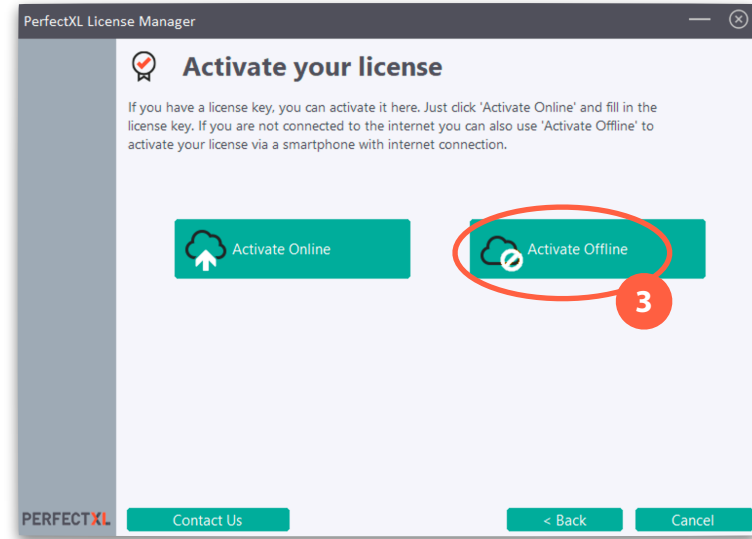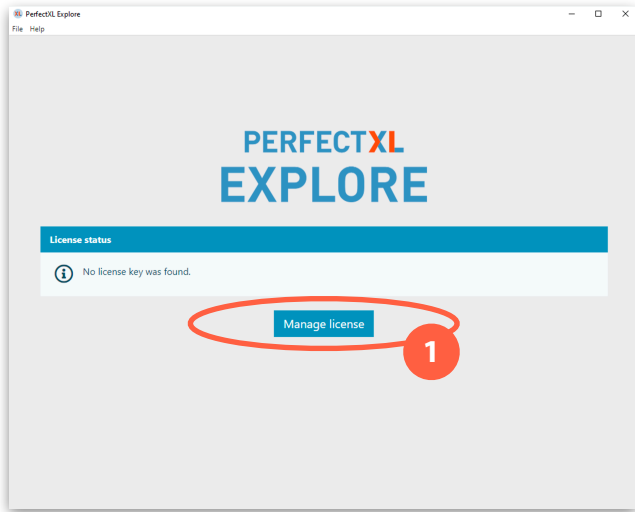
Option 4: Automatic activation using proxy-settings
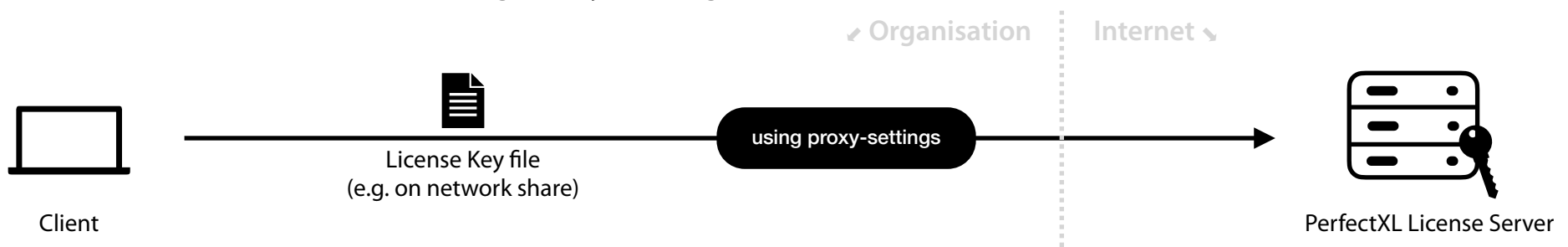
License Key file
(e.g. on network share)

using proxy-settings
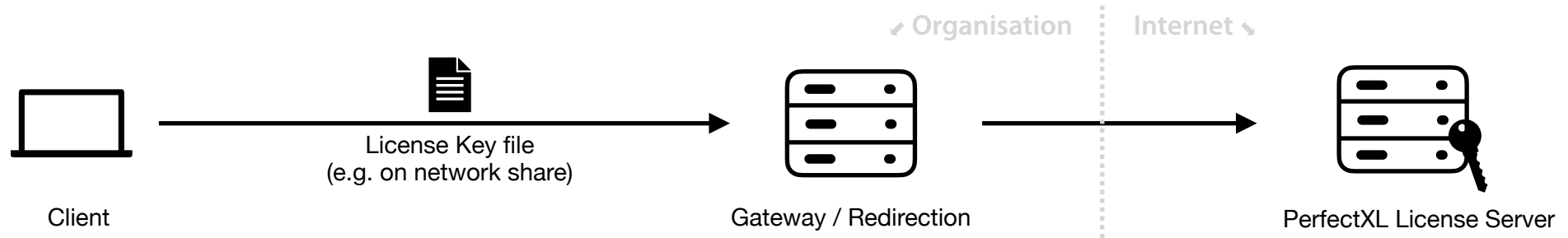
Client

PerfectXL License Server

Automatic activation requires a temporary internet connection to reach the PerfectXL License Server. Especially within larger organisations it is common to see all internet traffic going through a proxy server. Proxy settings are detected automatically, but they often require explicit authentication to work. You can provide these in *appsettings.json*:

```json
{
  "Licensing": {
    "ActivationMethod": "Automatic",
    "ActivationKeyFile": "\\\\SRV\\license.txt",
    "ProxySettings": {
      "UseProxyAuthentication": true,
      "ProxyUser": "user",
      "ProxyDomain": "DOMAIN",
      "ProxyPassword": "paSSw0Rd"
    }
  }
}
```

If you suspect the wrong proxy server was detected, you can override it:

```json
{
  "Licensing": {
    "ActivationMethod": "Automatic",
    "ActivationKeyFile": "\\\\SRV\\license.txt",
    "ProxySettings": {
      "OverrideProxyServer": true,
      "ProxyHost": "proxyserver.local",
      "ProxyPort": "80"
    }
  }
}
```

Option 5: Automatic activation using a Gateway-server

Automatic activation requires a temporary internet connection to reach the PerfectXL License Server. When programs running on client machines cannot access external links directly, a Gateway-server could be an option. If your organisation offers off-the-shelf Gateway-servers you can configure one in **appsettings.json**:

```
{
  "Licensing": {
    "ActivationMethod": "Automatic",
    "ActivationKeyFile": "\\\\SRV\\license.txt",
    "LicenseServerUrl": "gateway.company.local"
  }
}
```

The `LicenseServerUrl` should point to the internal Gateway server; the server should redirect all traffic to https://license.perfectxl.com.

To set up a simple Gateway-server in IIS, follow these steps:

1. In IIS, install the components **URL Rewrite** and **Application Request Routing**;
2. Restart IIS (the program, not the server);
3. On server level, click **Application Request Routing Cache**;
4. On the right-hand side, click **Server Proxy Settings…**
5. If **Enable Proxy** is not checked, enable it and click **Apply** on the right-hand side (under **Actions**)
6. Use an existing website or create a new (empty) website in IIS and configure it to redirect all traffic. A simple *Web.config* example is provided on the next page.
7. Choose a binding in IIS at which the Gateway server should be available within the organisation. `LicenseServerUrl` in **appsettings.json** should point to this address.

Simple **Web.config** to set up a basic Gateway server:

```
<?xml version="1.0" encoding="UTF-8"?>
<configuration>
    <system.webServer>
        <rewrite>
            <rules>
                <rule name="PerfectXL License Server" stopProcessing="true">
                    <match url=".*" />
                    <action type="Rewrite" url="https://license.perfectxl.com/{R:0}" />
                </rule>
            </rules>
        </rewrite>
    </system.webServer>
</configuration>
```

All configuration options

This is a list of all posible configurations, along with where they should be placed in **appsettings.json**. All configurations are optional; the values shown are the defaults used when the respective options are omitted.

```
{
  "Analysis": {
    "TimeoutMinutes": 10                      How long before an analysis should be automatically cancelled.
  },
  "Application": {
    "EnableAutoUpdate": true                  Whether tools should update automatically.
  },
  "Kestrel": {
    "Endpoints": {
      "Http": {
        "Url": "http://localhost:61945"       Local API endpoint. Port number varies by tool.
      }
    }
  },
  "Licensing": {
    "ActivationMethod": "Manual",             Other option is "Automatic" (in which case also supply ActivationKeyFile)
    "ActivationKeyFile": "",                  Path to license.txt containing the activation key.
    "LicenseServerUrl": "",                   Overrides default license server (https://license.perfectxl.com).
    "LicenseBinding": "ComputerName",         How to identify installations. Other option: "LoggedInUser".
    "LicenseStorage": "CommonData",           Options: "CommonData", "FilePerUser", "FilePerMachine", "Registry"
    "ProxySettings": {
      "OverrideProxyServer": false,           Set to true to provide a ProxyHost and ProxyPort.
      "ProxyHost": "",                        Use to override detected proxy host.
      "ProxyPort": 80,                        Use to override detected proxy port.
      "UseProxyAuthentication": false,        Set to true to provide a ProxyUser, ProxyDomain and ProxyPassword.
      "ProxyUser": "",                        Specifies user for proxy authentication.
      "ProxyDomain": "",                      Specifies user domain for proxy authentication.
      "ProxyPassword": "",                    Specifies password for proxy authentication.
```

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```
        }
    },
    "Logging": {
        "LogLevel": {…},
        "File": {
            "Path": "%AppData%\\[…].log"              Where to log errors and messages. Exact path depends on tool.
        }
    }
}
```