

# VISUAL INSTALLER

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## Introduction

Thank you for using xeam Visual Installer.

Xeam Visual Installer is available in four different editions: Bronze, Silver, Platinum and Source Code, starting at Bronze edition with basic functionality up to Platinum edition with no limitations in features, extensions and themes.

If you are using the Bronze edition, you are able to upgrade to all other editions at any time by obtaining a license key and pasting it into the configuration.xml file.

## Developer system requirements

- Visual Studio 2010 or above
- WiX Toolset 3.7 and above

If you want to use Visual Studio 2013, WiX 3.8 is required.

## Get Started

[Visual Studio 2012, Wix Toolset 3.X.](#)

Install the xeam Visual Installer. The Visual Installer needs at least .Net 4 Client Profile to run.

## Create a new project from template

Open Visual Studio, go to File -> New Project. Under Windows Installer XML node select Visual Installer project. Provide a name for your project e.g. "MyInstaller" and click OK. A new project based on a WiX Toolset bundle project will be created.

## Add UI Project (optional and available only in Silver and Platinum editions)

During project creation you are able to add a UI project. The UI project allows you to see and customize every page in the installer and even add new pages. Select this option if you want to customize the UI.

## Change bundle name, Manufacturer and Version

Open the file "Bundle.wxs". In bundle tag change the attributes "Name", "Version" and "Manufacturer" to your needs

## Add packages to the chain node

Add packages to the chain node, like you normally do to configure burn bootstrapper in WiX Toolset.

## Build

Build the project and you will have a complete working bootstrapper.

## Bundle.wxs file

In the "Bundle.wxs" file are some addition entries for configuring xeam Visual Installer.

### BootstrapperApplicationRef

```
<BootstrapperApplicationRef Id="ManagedBootstrapperApplicationHost">  
  <PayloadGroupRef Id="VisualInstallerRuntimeFiles" />  
</BootstrapperApplicationRef>
```

Please do not changed this tag. It is used to initialize the bootstrapper.

## Configuration

If you create a new project, all available features for the Platinum edition are active by default. This also means, that all wizard pages are shown and you may not require all of them.

The configuration file “VisualInstallerConfig.xml” is located in the “VisualInstaller” folder, if you have created a simple xeam Visual Installer project without adding the UI project or, if you have added also the UI project, the file is located directly in the root folder of your UI project.

Edit this file to fit your needs. An xsd schema is provided for “VisualInstallerConfig.xml” file, so it is very easy to adjust.

## License

The license node is used for determining the edition of your Visual Intaller project. By default, the Visual Installer provides a Platinum Trial license key. This trial license key can be used for 30 days.

When creating a new project, your current license key, will be inserted into the license node in the configuration file.

You can see information about your currently used license, if you click on the menu point “Visual Installer” under “Tools” in Visual Studio. There you can also change the current license. If you change your license, the projects created after this, will contain the new license key in the license node in configuration file.

Note: the projects created before the license was changed, have to be manually updated by you: paste your new license key in the license node of the configuration file, if you want to update older projects.

If you leave the license node empty, you will get a Platinum Trial with all available features. In the trial version a trial dialog screen is shown when you run your bootstrapper. Except this restriction you are able to use all available features.

If you activate a feature that is not available for your edition, a trial dialog will be shown when an unsupported feature is loaded, but you will be able to continue and tryout the feature.

Note: Bronze edition is fully free of charge.

## UI

Under UI node you are able to configure general UI behavior and also the behavior of every single page.

### Culture & DefaultSystemCulture

In Culture node you can select a default culture to use for the UI and for the license terms defined in the "license.rtf" file.

If you leave this node blank, the culture specified in the node DefaultSystemCulture will be used for the UI; for the license terms the default "license.rtf" file will be used.

Possible values of the DefaultSystemCulture node are:

**InstalledUICulture** - Operating system culture (same as CultureInfo.InstalledUICulture in .Net)

**CurrentCulture** - The culture on the system used for formatting numbers and dates (same as CultureInfo.CurrentCulture in .Net)

**CurrentUICulture** - The culture on the system used for localizing application (same as CultureInfo.CurrentUICulture in .Net)

If you don't specify this node, the **InstalledUICulture** is used by default.

If you provide a culture for example "en-US", you have to make sure the localization files "en-US.wxl", "systemvalidation\_en-US.wxl" and the "license\_en-US.rtf" are present.

For more detailed information see -> Localization.

## Theme

Basic Theme configuration

<b>ThemeColor</b>	Basic Theme Color, you can overwrite Allowed values: Xeam, XeamDark, Blue, BlueDark, Red, RedDark, Green, GreenDark, Orange, OrangeDark, Purple, PurpleDark, None
<b>ThemeBaseColor</b>	Main background colors. Allowed values: BaseLight BaseLightSmooth BaseDark BaseDarkSmooth

<b>AccentColor</b>	Overwrites the accent color. You can specify a color in web notation e.g. #1122DD
<b>AccentContrastColor</b>	Overwrites the accent contrast color. Basically used as font color on buttons having accent color assigned. This value is ignored if no AccentColor is set.

## Pages

In the pages sub node of UI you can configure the different pages shown in the installation process.

### Install Welcome

This is the welcome page, which is shown when the installation starts.

<b>InstallDirVariable</b>	Variable in bundle.wxs where installdir is stored and default value is read from.
<b>ShowInstallDirSelection</b>	True: selection of installdir is shown False: selection of installdir is not shown
<b>ShowLicenseInfo</b>	True: license.rtf (or the localized license.rtf e.g.: license_en-US.rtf) is displayed as EULA and the user has to accept EULA to go to the next page False: now EULA is shown and next button is always active

### Layout Welcome

Layout welcome page, which is shown if the user starts the installation with -layout command.

Layout mode can be used to create a network image of the setup from disk as well as from a web setup. If used on a web setup all content is downloaded to the image folder. The created layout image can be used as offline installer.

<b>ShowLicenseInfo</b>	True: license.rtf (or the localized license.rtf e.g.: license_en-US.rtf) is displayed as EULA and the user has to accept EULA to go to the next page False: now EULA is shown and next button is always active
------------------------	---

## Update Available

This page is only shown if a newer version of the product is found. The user can select to download and install the new version or install the product as is. If no internet connection is available the page is not shown.

If the user selects to install the new version, the setup of the new version is automatically downloaded, started and the old version of the setup is closed.

To configure self-update of the installer you have to upload an xml file with the following format on a web server:

```
<?xml version="1.0" encoding="utf-8"?>
<VisualInstallerUpdateInfo
  xmlns="http://www.laika42.com/schemas/visualinstaller/updateinfo/1.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <Version>1.7</Version>
  <Name>Visual Installer </Name>
  <Description>some description about the package</Description>
  <UpdateInfo>Put some information about the update here. </UpdateInfo>
  <DownloadUrl>http://test.laika42.com/update/testsetup.exe</DownloadUrl>
  <DownloadSize>2587816</DownloadSize>
</VisualInstallerUpdateInfo>
```

- Version: The new version of the product
- Name: Name of the product which is downloaded and displayed on update available page
- Description: Description of the update shown to the user on update available page
- DownloadUrl: Url where the new version can be downloaded
- DownloadSize: Size of the initial file to be downloaded. External payload like redistributables must not be included. DownloadSize is used to indicate progress to the user.

In bundle.wxs add an update location node which points to you updateinfo.xml file on your server. The node should look like:

```
<Update Location="http://test.laika42.com/UpdateInfo.xml"/>
```

**Remarks:** We highly recommend to test this feature before delivering the first version of the product, because you will not be able to change the location if the product was shipped to customers.

Note: this page not available in Bronze edition



## SQL Server Connection

The SQL Server Connection page allows you to ask the user for credentials and optional a database for obtaining a SQL Server connection string, which you can pass to your chained MSI's or setups. The user can only go on with the setup if he selects a valid connection and a connection tests was successful.

The behavior of the connection page is very similar to the connection dialog within visual studio. In domain environments all running SQL Server instances are determined automatically and the user can select one in a combo box or enter a server name or IP manually.

### **ConnectionStringVariable**

Variable in bundle.wxs where SQL Server connection string is stored. You can provide a default value which will be used to initialize the SQL Server connection dialog page. The variable is only updated, if the user enters valid connection credentials and options

### **ServerNameVariable**

Variable in bundle.wxs where server name is stored. You can provide a default value which will be used to initialize the SQL Server connection dialog page. The variable is only updated, if the user enters valid connection credentials and options

### **InstanceNameVariable**

Variable in bundle.wxs where instance name is stored. You can provide a default value which will be used to initialize the SQL Server connection dialog page. The variable is only updated, if the user enters valid connection credentials and options

### **IntegratedSecurityVariable**

Variable in bundle.wxs where integrated security is stored. You can provide a default value which will be used to initialize the SQL Server connection dialog page. The variable is only updated, if the user enters valid connection credentials and options

### **UserNameVariable**

Variable in bundle.wxs where user name is stored. You can provide a default value which will be used to initialize the SQL Server connection dialog page. The variable is only updated, if the user enters valid connection credentials and options

### **PasswordVariable**

Variable in bundle.wxs where password is stored. You can provide a default value which will be used to initialize the SQL Server connection dialog page. The variable is only updated, if the user enters valid connection credentials and options

<b>DatabaseNameVariable</b>	Variable in bundle.wxs where database name is stored. You can provide a default value which will be used to initialize the SQL Server connection dialog page. The variable is only updated, if the user enters valid connection credentials and options
<b>QueryDatabase</b>	True: The user has to select a database False: The user only has to enter a valid server and credentials. Selection of a database is not shown
<b>CreateDatabase</b>	True: The user is allowed to create a new database from within the bootstrapper False: The user is only able to select existing databases
<b>UseOleDb</b>	True: The connection string will be generated in the OleDb format False: The connection string will be generated in the SQL format
<b>OleDbProvider</b>	Provider to use for generating a OleDb connection string; if the "UseOleDb" is set to False, this parameter is ignored

**Note:** this page is not available in Bronze edition

## License Validation

On license validation page you are able to query a license key including validation. The license validation page is designed for different types of key validation. One option is to use a single input field for serial numbers. The other option is a large text field providing the ability to paste a large license file content. Optional a machine key can be displayed.

For validating the given license key and providing a machine key you can use your custom license validation functions in a separate assembly. For more information please refer to chapter “Custom license validation” under “Extending Visual Installer”.

Next button in setup is disabled until the user entered a valid license key.

<b>LicenseStringVariable</b>	Variable in bundle.wxs where license string is stored. You can use this variable to pass the validated license string to your MSI or other chained setups.
<b>InputMaskSelectionLength</b>	Integer defining the length of one block of the license key. Leave this field empty if you want to use a large input text field without a mask
<b>InputMaskSectionNo</b>	Number of blocks divided by ‘-’. Leave this field empty if you want to use a large input text field.
<b>UpperCase</b>	True: All entered characters will be converted to upper case characters False: Disable upper case conversion
<b>ShowMachineKey</b>	True: machine key will be displayed above the license key input field. False: hide machine key control
<b>LicenseAssembly</b>	Name of the assembly where your custom class implementing <code>ILicenseValidationItem</code> interface is implemented
<b>LicenseClassWithNamespace</b>	Name of class, including namespace, which implements <code>ILicenseValidationItem</code>

**Note:** this page is not available in Bronze edition

## System validation

System validation page provides warning and block messages. For example, if your product requires Microsoft Word installed, because you are installing a Word Addin, you can activate a rule to check if a supported version of Microsoft Word is installed.

System validation page also supports end user help actions. For example if your product requires specific IIS features, installed IIS features are validated. If a required feature is not active, a help action button is shown. In this case “Activate required IIS features”. The user only has to click on the help action button and the required features in IIS will be activated automatically.

You also can add custom system validation items. The system validation can be extended using MEF. (See chapter: Extending Visual Installer).

The following system validation items are built in:

<b>Pending System Reboot</b>	Detects, if a system reboot is pending. If a reboot is pending “Restart System” button is shown as help action
<b>Another Installation Running</b>	Detects, if another installation is already running on the system.
<b>Operating System</b>	Define supported operating systems, including required service packs or 32 and 64 bit support. Differentiate between server and workstation. If a service pack is missing the user is lead to Windows Update as help action
<b>Word Version</b>	Define supported Microsoft Word versions
<b>Excel Version</b>	Define supported Microsoft Excel versions
<b>PowerPoint Version</b>	Define supported Microsoft PowerPoint versions
<b>Outlook Version</b>	Define supported Microsoft Outlook versions
<b>Visio Version</b>	Define supported Microsoft Visio versions
<b>Visual Studio Version</b>	Define supported Microsoft Visual Studio versions
<b>WiX Toolset Version</b>	Define supported WiX Toolset versions
<b>IIS Version and Roles</b>	Define required IIS version and roles. Every available IIS version rule can be defined. As help action the required IIS version and roles are activated

**Note:** this page is not available in Bronze edition

## Path Selection Page

Extended path selection is possible on path selection page. The page can be configured to ask the user for up to 5 paths.

Every path is validated including disk space calculation. For more information in setting up folder validation see chapter Folder Validation.

<b>InstallDirVariable</b>	Name of variable for InstallDir defined in bundle.wxs
<b>DataDirVariable</b>	Name of variable for DataDir defined in bundle.wxs
<b>BackupDirVariable</b>	Name of variable for BackupDir defined in bundle.wxs
<b>LogDirVariable</b>	Name of variable for LogDir defined in bundle.wxs
<b>TempDirVariable</b>	Name of variable for TempDir defined in bundle.wxs
<b>ShowInstallDirSelection</b>	True: Shows InstallDir selection on page
<b>ShowDataDirSelection</b>	True: Shows DataDir selection on page
<b>ShowBackupDirSelection</b>	True: Shows BackupDir selection on page
<b>ShowLogDirSelection</b>	True: Shows LogDir selection on page
<b>ShowTempDirSelection</b>	True: Shows TempDir selection on page

**Note:** this page is not available in Bronze edition

## Newer Version Installed

This page is shown if a newer version of the product is already installed. It displays the installed version of the product. There are no additional options to configure.

## Help

Help page is shown if the installer is launch using –help command line parameter or an invalid command line is passed to the installer. Help page displays all command line parameters which can be passed to the installer. If you have additional properties that can be passed to the installer you can extend the text displayed on this page by editing the localization files.

## Sequences

In sequence section you are able to arrange the sequence of pages shown during the installation. If you do not want to use a specific page, just delete its entry or comment it out. There is no dependency between the pages. Every page works isolated and is independent of any other page. You also can changed the order of the pages to fit your needs.

There are 2 page sequences defined at the moment:

- InstallUiSequence: Defines sequence if product is not installed
- LayoutUiSequence: Defines sequence for layout mode.

- MaintenanceUiSequence: Defines sequence if product is installed and user wants to modify, repair or uninstall the product.
- NewerVersionInstalledUiSequence: Defines the page sequence which is shown if a newer version of the product is already installed
- HelpUiSequence: Defines sequence which is shown if user passes /help on command line or if wrong command line switches are detected

## Restrictions and minimum page sequence

The only restriction to pages is that you have to use a minimum page sequence and custom pages need to be placed in between a specific section.

### InstallUiSequence

<UpdateAvailable> (optional)

<InstallWelcome>

.... Optional pages ....

<Progress>

<Finish>

<FinishError>

### LayoutUiSequence

<LayoutWelcome>

... Optional pages ...

<Progress>

<Finish>

<FinishError>

### MaintenanceUiSequence

<MaintenanceWelcome>

.... Optional pages ....

<Progress>

<Finish>

<FinishError>

[NewerVersionInstalledUiSequence](#)

<NewerVersionInstalled>

... Optional pages ...

[HelpUiSequence](#)

<Help>

... Optional pages ...

## Splash Screen

You can change the splash screen of the bootstrapper by replacing splash.bmp in Payload\Resources folder. Be aware that the format must be "BMP".

## Setup icon

You can change icon of the setup by replacing the file icon.ico in sub folder Payload\Resources.

# Folder Validation and Disk Space Calculation

## Folder Validation options

To configure folder validation add <FolderValidation> tag in the configuration file. The following folders can be validated:

- InstallDir
- DataDir
- BackupDir
- LogDir
- TempDir

Every folder has validation options

<b>Disabled</b>	Enable or disable folder validation. Default is disabled
<b>Networkallowed</b>	Allows the folder to point on a network drive. Default is false
<b>Readonlyallowed</b>	Allows the folder to point to a read only driver. Default is false
<b>Removableallowed</b>	Allows the folder to point to a removable driver. Default is false

## Disk Space Calculation

Visual Installer comes with a WiX compiler extension, which enables addition disk space calculation to be configured for MsiPackage, ExePackage, MspPackage and MsuPackage.

MSI Packages will be analyzed during compile time of your WiX bundle to extract meta data for disk space calculation. The information of required disk space is analyzed for InstallDir, System drive and additional selectable folders separately.

In addition to automatic disk space calculation you can set free disk space required for every folder by defining the required install size in byte. In case your application requires a minimum free disk space or a data folder you can set e.g. 200 MB for DATADIR.

## Localization

### Modes

xeam Visual Installer is fully localizable. As mentioned in the configuration section localization has 2 different mode.



- Fixed culture. UI will always be displayed in the defined culture. Make sure that a language file and the license terms (e.g. license\_en-US.rtf ) are provided for the selected culture.
- Usage of system culture including fallback to en-US if system culture is not available. For the license terms, the default file license.rtf is used, if not other one is provided.

## Changing displayed text

In subfolder Payload\Localization all language files are provided in wxl format (WiX Localization).

You are free to change the text in any language file to fit your needs. Please take care that the provided text fits on the screens and buttons. Also note, that if you adjust existing language files you have to merge them, if we extend or change the language files during an update.

## Adding a new language

The language files follow .Net Framework culture values as naming conventions. To get them work in system culture mode, please make sure that you name the file exactly like the .Net culture name.

Follow the next steps to add a new language file:

1. Add a new wxl file to the localization folder with the name of your culture. Right click on Localization Folder -> New Item.. and select "Localization File". Give it the name of your new culture e.g. "en-UK".
2. Define all the strings you require using IDs in en-US.wxl file
3. Translate the strings. Add your custom localization file to VisualInstallerPayload.wxs. e.g. add `<Payload SourceFile='${var.VisualStudioFolder}\Localization\en-UK.wxl' />`

It is not required to define all strings in your custom wxl file. If a string is not available in your custom wxl file the English text is shown as fallback.

**Note:** Don't forget to set the "Copy to Output Directory" property of the newly added localization file to "Copy always", otherwise you will get compile errors, because the bundle cannot find the localization file.

## Localize EULA

By default, the license.rtf file from the Resources folder in your bundle project is used to show the license and terms on the Welcome page.

If you specify a culture in the configuration file, e.g. `<culture>en-US</culture>`, then you have also to provide a license\_en-US.rtf and add it to the VisualInstallerPayload.wxs, otherwise at runtime, you will get a message telling you that the localized license file is missing.

The localized license files must be named like follow: license\_<CULTURE>.rtf, where the variable <CULTURE> has to be exactly like the culture name in the .Net ( e.g. license\_es-ES.rtf, license\_de-CH.rtf).

Follow the next steps to add a new localized license file:

1. Add a new file named license\_<CULTURE>.rtf to the Resources folder in your bundle project
2. Translate your license and terms in the desired culture and save the file
3. Add the license file to the VisualInstallerPayload.wxs.  
e.g. add `<Payload SourceFile='Resources\license_en-US.rtf' />`
4. Rebuild the project.

## Submitting a new language file to us

### Be the first to submit a new language for xeam Visual Installer to us!

You are welcome to contribute on localization of xeam Visual Installer. As benefit you will get a free license of the highest edition including all updates during your contribution. Feel free to contact us if you want to contribute: [support@xeam-solutions.com](mailto:support@xeam-solutions.com)

## Command Line Options

### UI Parameters

- q, -quiet, -s, -silent = silent install
- passive = progress bar only install

### Install commands

- uninstall = uninstall
- repair = repair (or install if not installed)
- package,-update = install (default)
- layout = create a local/admin image

### Restart handling

- norestart = suppress any restarts
- promptrestart = prompt if a restart is required (default)

## Logging

- l, -log = log to a specific file (default TempFolder)
- logtoconsole = logs everything to console, if started from console

## Help

- ? = show this information screen

## Additional Parameters:

- INSTALLDIR - Installation folder where application will be installed
- SQLCONNECTIONSTRING - SQL Connectionstring if required by application
- LICENSESTRING - License string if required by application

usage: PARAMETER=value

All public bundle parameters can be passed to the installer as additional parameters.

## Extending Visual Installer

### Adding a custom page

Adding a new custom page to the installer is quite easy:

- Right click UI project -> Add new item...
- Under Visual C# select "Visual Installer Page"
- Select a name for your page (xaml File) and hit "Add"
- 2 new files are created. "YourPage.xaml" including the corresponding .cs and a corresponding view model in "YourPageViewModel.cs"
- Add the page to a sequence in VisualInstallerConfig.xaml by adding a xml tag `<YourPage />`
- Build your project, start the installer and test if your page appears at the defined place in the sequence.

After adding the new page you can modify layout and add custom code.

### Extend/Derive from an existing page

In the sub folder "IntegratedPages" all default page layouts are placed. You can modify layout and design to fit your needs. You also can implement your custom code directly in the .cs file. For a proper MVVM design we suggest you to derive from your own ViewModel from the ViewModel and set the new ViewModel to be used by the existing page.

### Modifying Main Window / Apply custom theme

You can modify the size and design of the main window. You are allowed to change nearly everything but you should not remove or modify the PageTransitionControl. This control is used to slide the pages.

If you want to add your custom resource dictionaries to apply your custom theme you can add resource dictionaries to the main window or to the pages itself. Please note that you must set the theme to none in VisualInstallerConfiguration.xml file.

### Custom License Validation

It is quite easy to extend license validation page with your own license validator.

Just implement the `ILicenseValidator` interface in your custom assembly. To use `ILicenseValidator` add a reference to `Xeam.VisualInstaller.dll`

After implementing your custom assembly you have to add it at LicenseValidation in the configuration.xml file (see above)

Add your custom assembly to VisualInstallerPayload.wxs.

### Interface Implementation Sample:

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using Xeam.VisualStudio.Installer.Utilities;

namespace Xeam.DummyLicenseValidator
{
    public class LicenseValidator : ILicenseValidator
    {
        public bool IsKeyValid(string key)
        {
            if (key == "11111-11111-11111-11111")
            {
                return true;
            }
            if (key == "222")
            {
                return true;
            }
            return false;
        }
    }
}
```

### Configuration for the above sample

```
<LicenseValidation>
  <LicenseStringVariable>LICENSESTRING</LicenseStringVariable>
  <!-- input mask, e.g.: xxxx-xxxx-xxxx-xxxx-xxxx -->
  <InputMaskSectionLength>5</InputMaskSectionLength>
  <InputMaskSectionNo>4</InputMaskSectionNo>
  <UpperCase>true</UpperCase>
  <LicenseAssembly>Xeam.DummyLicenseValidator.dll</LicenseAssembly>
  <LicenseClassWithNamespace>
    Xeam.DummyLicenseValidator.LicenseValidator
  </LicenseClassWithNamespace>
</LicenseValidation>
```

## Custom System Validation Item

You can extend the system validation page with your own validation items. MEF is used to load custom validation items from custom assemblies.

You only have to implement the class `SystemValidationBase` defined in the `Xeam.VisualInstaller.SystemValidation.dll`, define your class as Export of interface `ISystemValidationItem` and add your assembly to the `VisualInstallerPayload.wxs` file.

Example:

Create a C# class library, for example: `MyValidation.csproj`.

Add a reference to `Xeam.VisualInstaller.dll`, `Xeam.VisualInstaller.SystemValidation.dll` and `System.ComponentModel.Composition.dll`

Add a file "`SystemValidationExample.cs`", containing:

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.ComponentModel.Composition;
using System.ComponentModel.Composition.Hosting;
using Xeam.VisualInstaller.SystemValidation;

namespace MySystemValidation
{
    [Export(typeof(ISystemValidationItem))]
    public class Class1 : SystemValidationBase
    {
        public override string ValidationItemNodeName { get { return "Class1"; } }

        public override bool ShowHelpActionButton { get { return true; } set { } }
        public override bool ShowProgressOnHelpAction { get { return false; } set { } }
        public override bool ShowProgressRingOnHelpAction { get { return true; } set { } }
        public override string HelpActionExecuteText { get { return "Executing help.." +
GetType().ToString(); } set { } }
        public override string HelpActionButtonText { get { return "Help Class1" +
GetType().ToString(); } set { } }

        public override void Execute()
        {

```

```
// ToDo: implement here your validation as desired.
for (int i = 0; i < 100; i++)
{
    // Raise a progress if you wish so
    RaiseProgressChanged(i);
    System.Threading.Thread.Sleep(30);
}

// If your validation has succeed, then just raise the ValidationState.Ok, otherwise
check out the other possible values of ValidationState.
RaiseCompleted(ValidationState.Ok);
}

public override void Initialize()
{
    // ToDo: initialize here your strings as desired.

    Text = "Class1";
}

public override void ExecuteHelpAction()
{
    // ToDo: implement here your help action as desired.

    for (int i = 0; i < 100; i++)
    {
        // Raise a progress for the help action
        RaiseHelpActionProgressChanged(i);
        System.Threading.Thread.Sleep(50);
    }

    // If the help action has completed you can raise Success, Failed or Success with
    restart of the computer.
    RaiseHelpActionCompleted(HelpActionResult.Success, "Finish help" +
    GetType().ToString());
}
}
}:
```

Build the project.

Open the configuration file and add under the <SystemValidation> node following line:

```
<Class1 Deactivated="false" Position="10" />
```

Now add the new assembly to the payload file:

```
<Payload SourceFile='Path_to_your_dll\MySystem\Validation.dll' />
```

When you run the bootstrapper, on the system validation page you will see a validation item called "Class1", with the result ok.

## WiX Toolset Remarks

### Signing your Installer

To digitally sign your bundle/installer using a code signing certificate you have to modify the WiX project file by hand. The following steps are required:

1. Unload you bundle from solution
2. Open project file in editor
3. Add `<SignOutput>true</SignOutput>` to the first property group
4. Add the following sign targets to the project node

```
<Target Name="SignBundleEngine">
  <Exec Command="signtool.exe sign /f <signature>.pfx /p &quot;<password>&quot;;
    /t http://timestamp.verisign.com/scripts/timstam.dll /v /d
    &quot;%(SignBundleEngine.Filename)&quot;; &quot;@(SignBundleEngine)&quot;;" />
</Target>
<Target Name="SignBundle">
  <Exec Command="signtool.exe sign /f <signature>.pfx /p &quot;<password>&quot;;
    /t http://timestamp.verisign.com/scripts/timstam.dll /v /d
    &quot;%(SignBundle.Filename)&quot;; &quot;@(SignBundle)&quot;;" />
</Target>
<Target Name="SignMsi">
  <Exec Command="signtool.exe sign /f <signature>.pfx /p &quot;<password>&quot;;
    /t http://timestamp.verisign.com/scripts/timstam.dll /v /d
    &quot;%(SignMsi.Filename)&quot;; &quot;@(SignMsi)&quot;;" />
</Target>
<Target Name="SignCabs">
  <Exec Command="signtool.exe sign /f <signature>.pfx /p &quot;<password>&quot;;
    /t http://timestamp.verisign.com/scripts/timstam.dll /v /d
    &quot;%(SignCabs.Filename)&quot;; &quot;@(SignCabs)&quot;;" />
</Target>
```



## Update / Upgrade handling

For proper update and upgrade handling, versions and upgrade codes must be configured in a correct way.

### Replace previous versions

If you want the updated version to automatically replace/uninstall previous versions of your product, you should **never change the upgrade code** of your bundle. Increase at least the minor version if you release a new version of your product.

### Install new version with old versions in parallel

If you do not want your previous version of the product to get uninstalled by an updated version, you have to **change the bundle upgrade code**. Different versions of your product will behave as different products, not knowing each other from an installer perspective. We recommend to increment the major version of the product.

### Upgrades

In some scenarios (e.g. you have 2 products which are also included into a product suite) upgrades are required. If you have 3 products A, B and C. And your product C consists of product A and B, but you want to have a single installation for product C, you may want that product C replaces product A and/or B if one of them is already installed. In this case, you have to define A and B as related upgrade bundles in product C. Add the following nodes to bundle.wxs of product C.

```
<RelatedBundle Id="UpgradeCode of Product A" Action="Upgrade"/>
<RelatedBundle Id="UpgradeCode of Product B" Action="Upgrade"/>
```

Remember that GUIDs (UpgradeCode) are handle case sensitive.

## Web Setup Configuration

WiX Toolset burn has an integrated mechanism to download required files/packages only if they need to be installed. This functionality is very useful to reduce the download size of your product, especially if prerequisites are required.

If you use web setups, you have to make sure that the download URLs of every external package and payload are configured properly.

Xeam Visual Installer enhances the built-in download mechanism and has an enhanced error handling and retry mechanism. This mechanism also tries different download methods on the end-user system in error cases.

## Additional Information

### Contacts and Feature Requests

If you have issues, feature request or other suggestions feel free to contact us [support@xeam-solutions.com](mailto:support@xeam-solutions.com) or leave a Q&A or comment in Visual Studio Gallery.

### Rate Us

If you like our Visual Installer don't forget to rate it! Thank you.

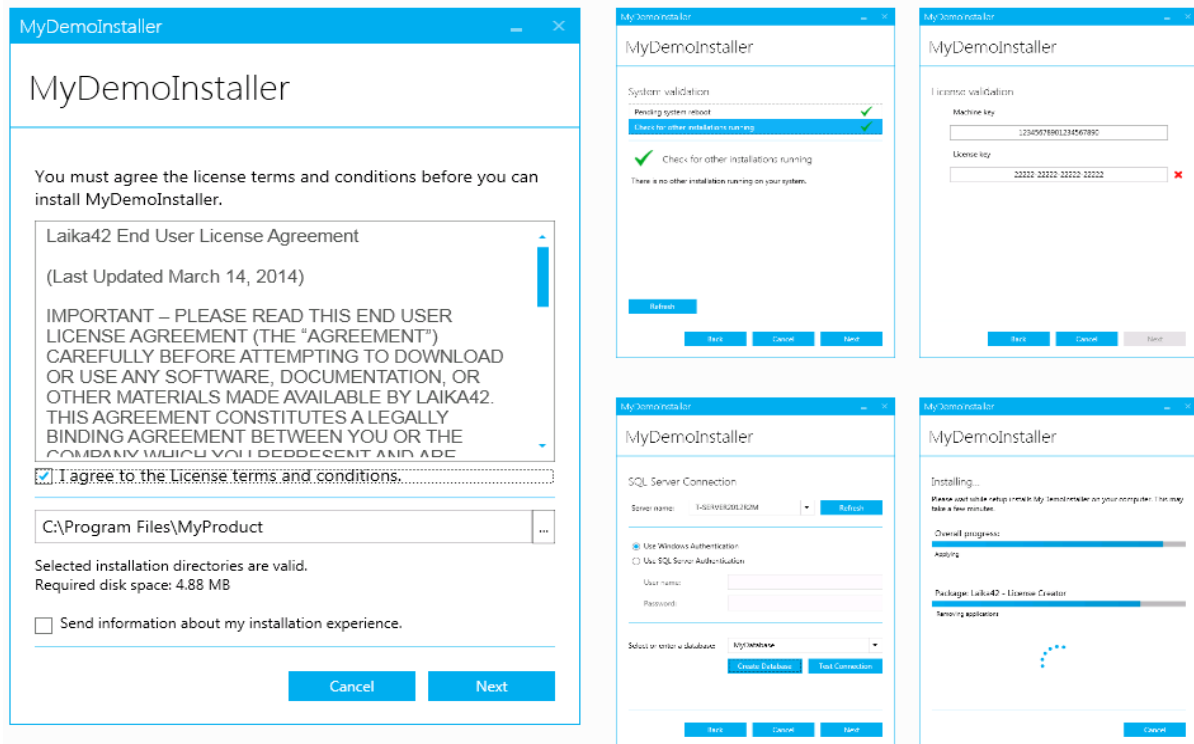
## Preview of default themes

Visual Installer comes with 12 accent themes and 4 background themes.

The accent themes are available over the Theme node in the configuration file, respectively the background themes are available over the ThemeBase node in the configuration file.

See below a the preview of the included themes.

Theme: Xeam, ThemeBase: BaseLight



The screenshots show the installation wizard for MyDemoInstaller in the BaseLight theme. The first window displays the license agreement and the user's agreement. The second window shows system validation. The third window shows the SQL Server connection settings. The fourth window shows the installation progress.

**MyDemoInstaller**

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☒ I agree to the License terms and conditions.

C:\Program Files\MyProduct

Selected installation directories are valid.  
Required disk space: 4.88 MB

☐ Send information about my installation experience.

**MyDemoInstaller**

System validation

Pending system reboot ☒

☒ Check for other installations running

There is no other installation running on your system.

**MyDemoInstaller**

License validation

Machine key: 12345678901234567890

License key: 00000 00000 00000 00000

**MyDemoInstaller**

SQL Server Connection

Server name: T-SERVER01234567890

☒ Use Windows Authentication  
☐ Use SQL Server Authentication

User name:

Password:

Select or enter a database: MyDatabase

**MyDemoInstaller**

Installing...

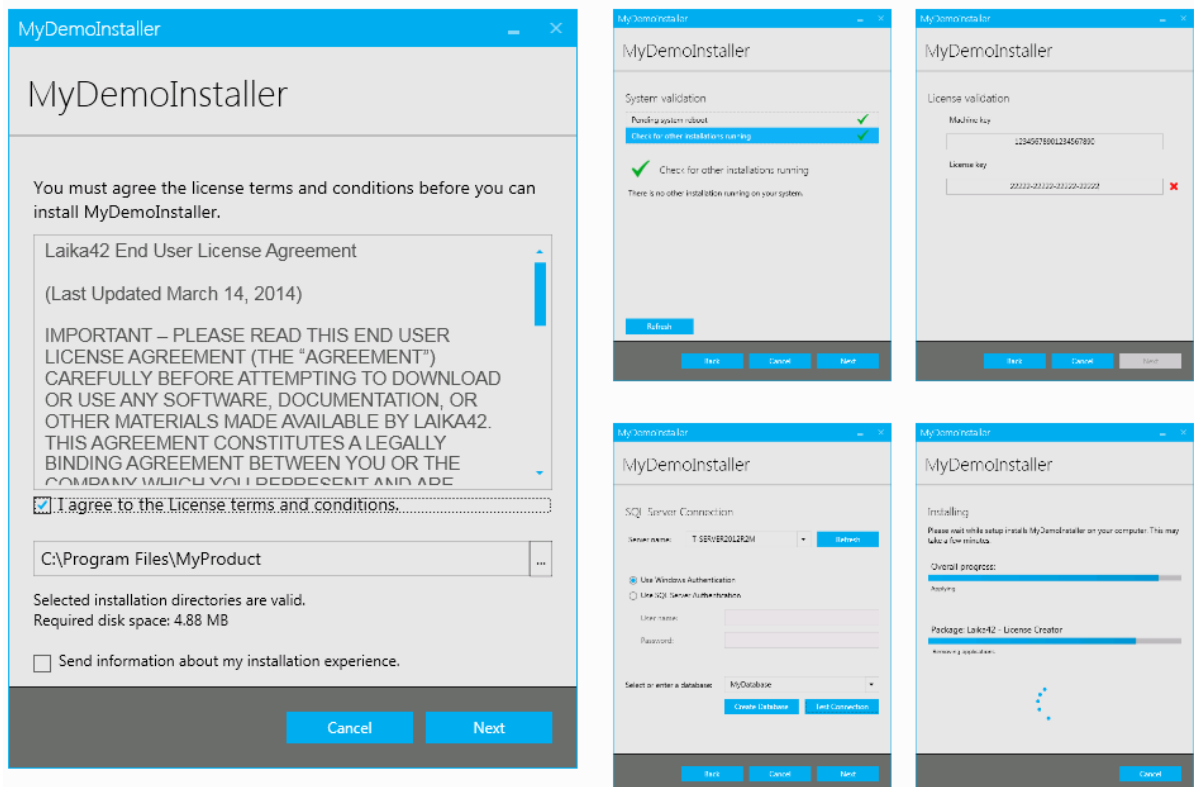
Please wait while setup installs MyDemoInstaller on your computer. This may take a few minutes.

Overall progress:

Package: Laika42 - License Creator

Removing applications

Theme: Xeam, ThemeBase: BaseLightSmooth



The screenshots show the installation wizard for MyDemoInstaller in the BaseLightSmooth theme. The first window displays the license agreement and the user's agreement. The second window shows system validation. The third window shows the SQL Server connection settings. The fourth window shows the installation progress.

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☒ I agree to the License terms and conditions.

C:\Program Files\MyProduct

Selected installation directories are valid.  
Required disk space: 4.88 MB

☐ Send information about my installation experience.

**MyDemoInstaller**

System validation

Pending system reboot ☒

☒ Check for other installations running

There is no other installation running on your system.

**MyDemoInstaller**

License validation

Machine key: 12345678901234567890

License key: 00000 00000 00000 00000

**MyDemoInstaller**

SQL Server Connection

Server name: T-SERVER01234567890

☒ Use Windows Authentication  
☐ Use SQL Server Authentication

User name:

Password:

Select or enter a database: MyDatabase

**MyDemoInstaller**

Installing...

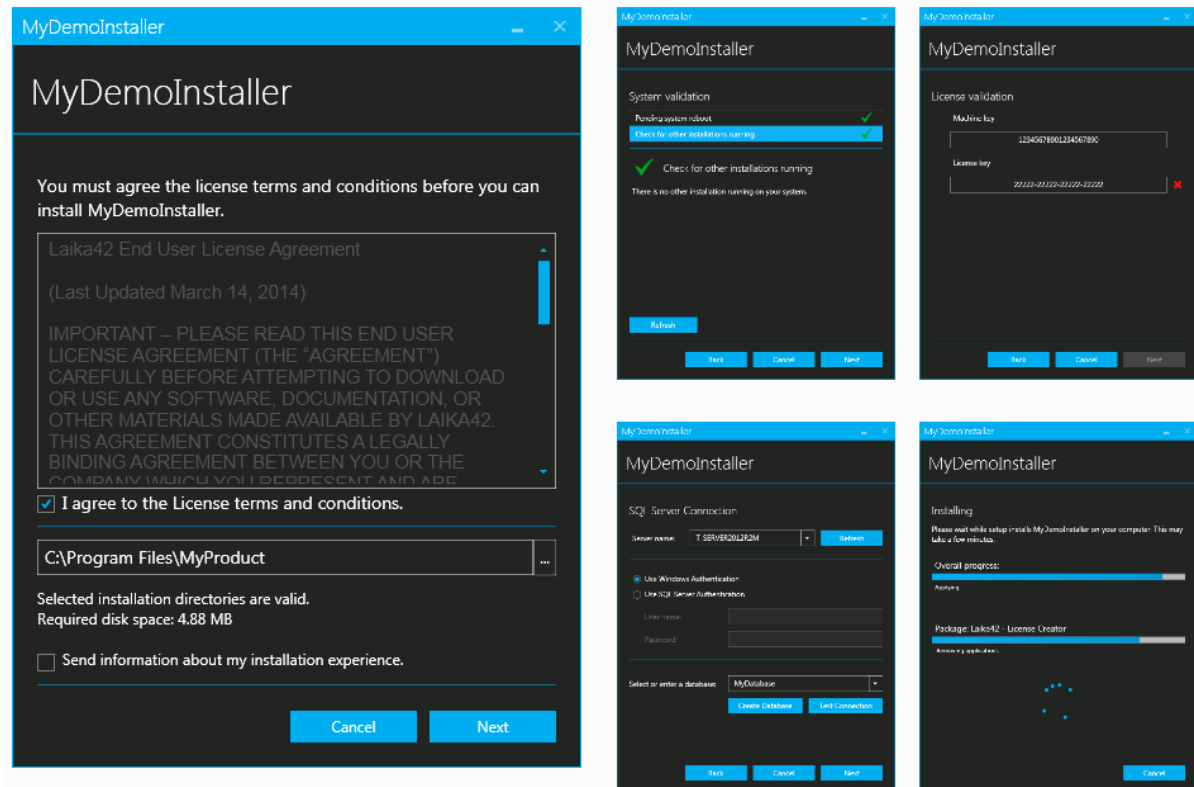
Please wait while setup installs MyDemoInstaller on your computer. This may take a few minutes.

Overall progress:

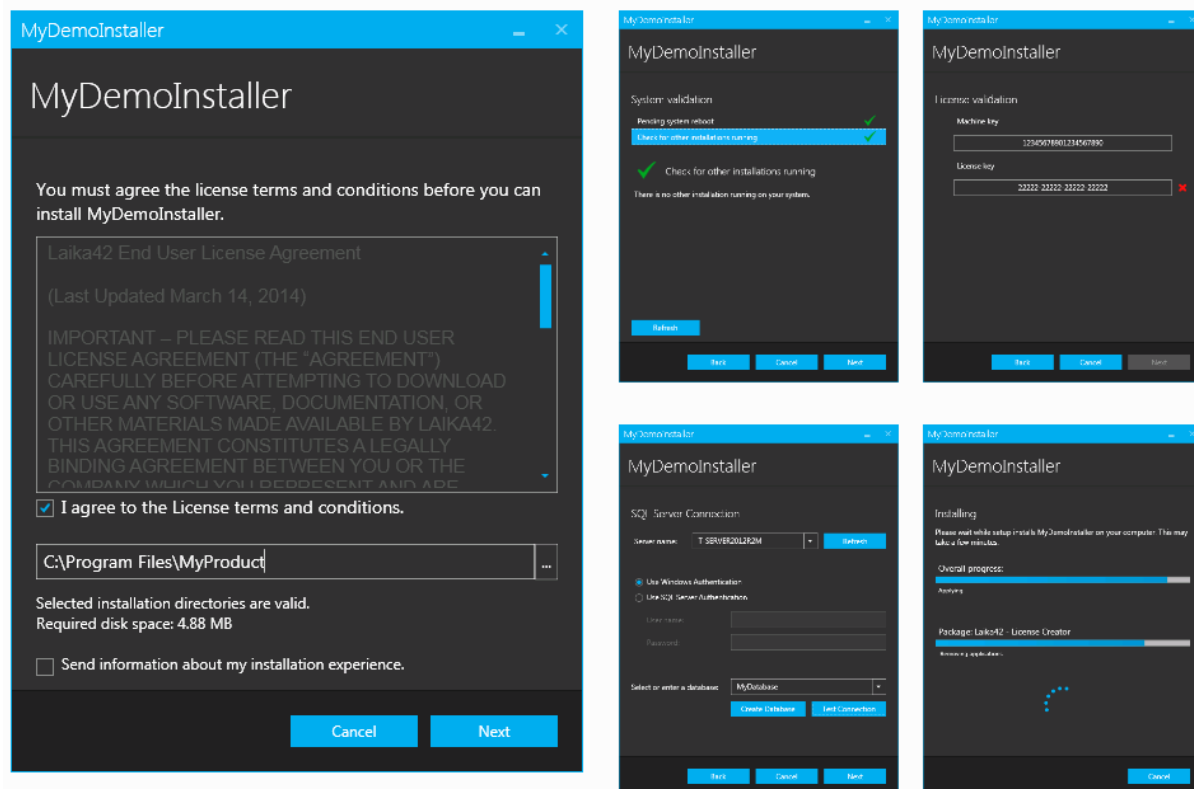
Package: Laika42 - License Creator

Removing applications

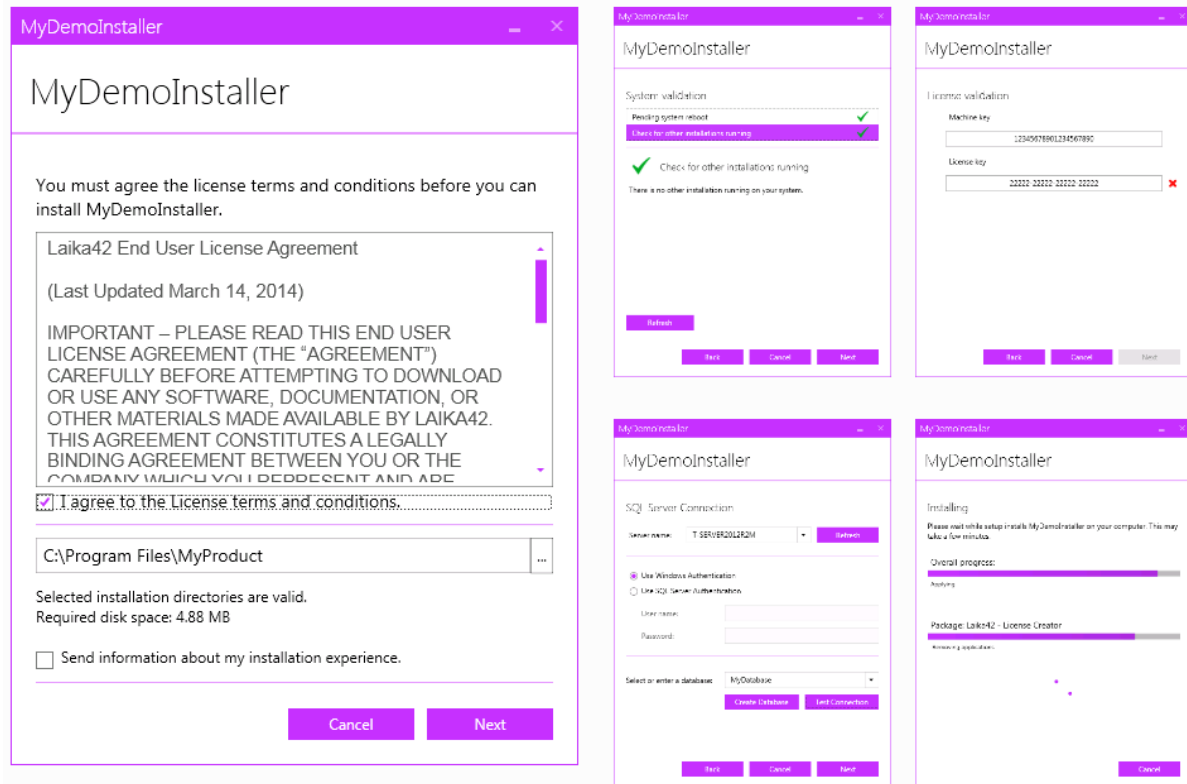
Theme: Xeam, ThemeBase: BaseDark



Theme: Xeam, ThemeBase: BaseDarkSmooth



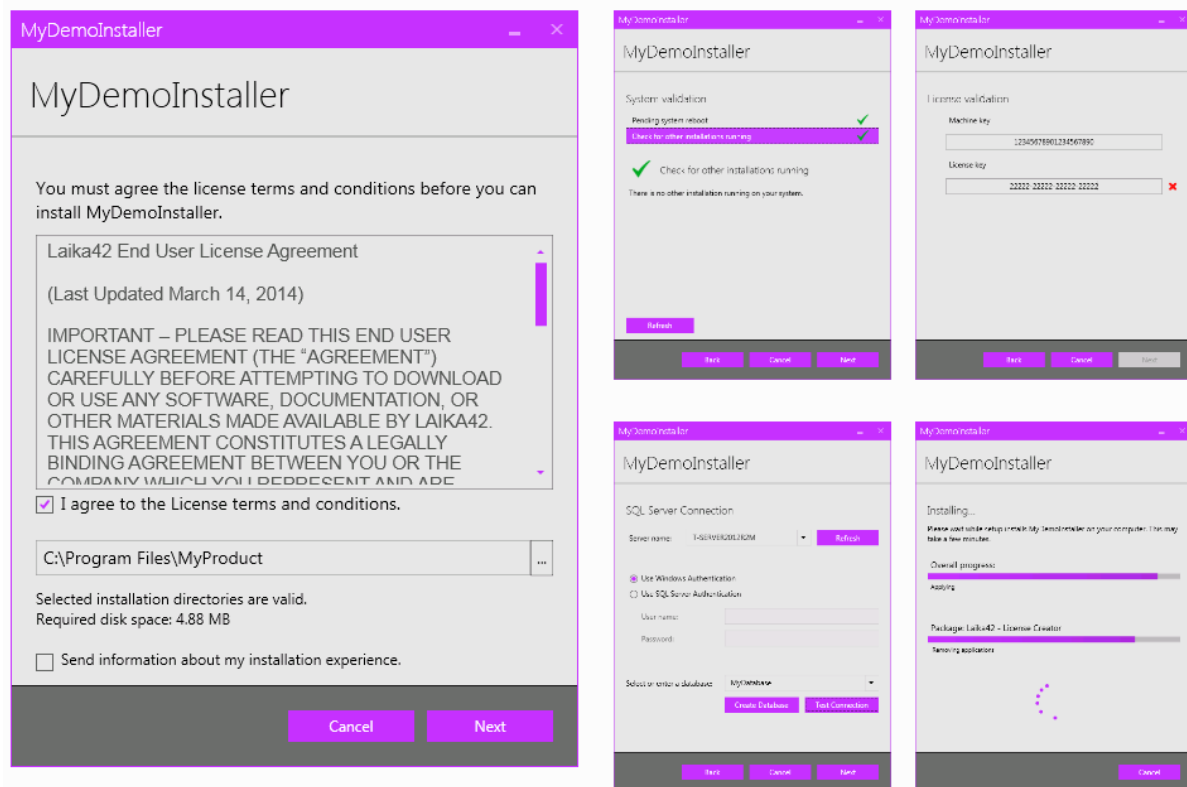
Theme: Purple, ThemeBase: BaseLight



The screenshots show the MyDemoInstaller setup wizard with a purple header and BaseLight theme. The steps are:

- License Agreement:** Displays the Laika42 End User License Agreement (Last Updated March 14, 2014). The user agrees to the terms, and the installation directory is set to C:\Program Files\MyProduct.
- System Validation:** Checks for system requirements. Pending system reboot and checks for other installations running are both successful.
- License Validation:** Checks the machine key (12345678901234567890) and license key (22222 22222 22222 22222).
- SQL Server Connection:** Configures the connection to the SQL Server. The server name is T-SERVER002R2M, and the user is using Windows Authentication.
- Installing:** Shows the progress of installing the package Laika42 - License Creator.

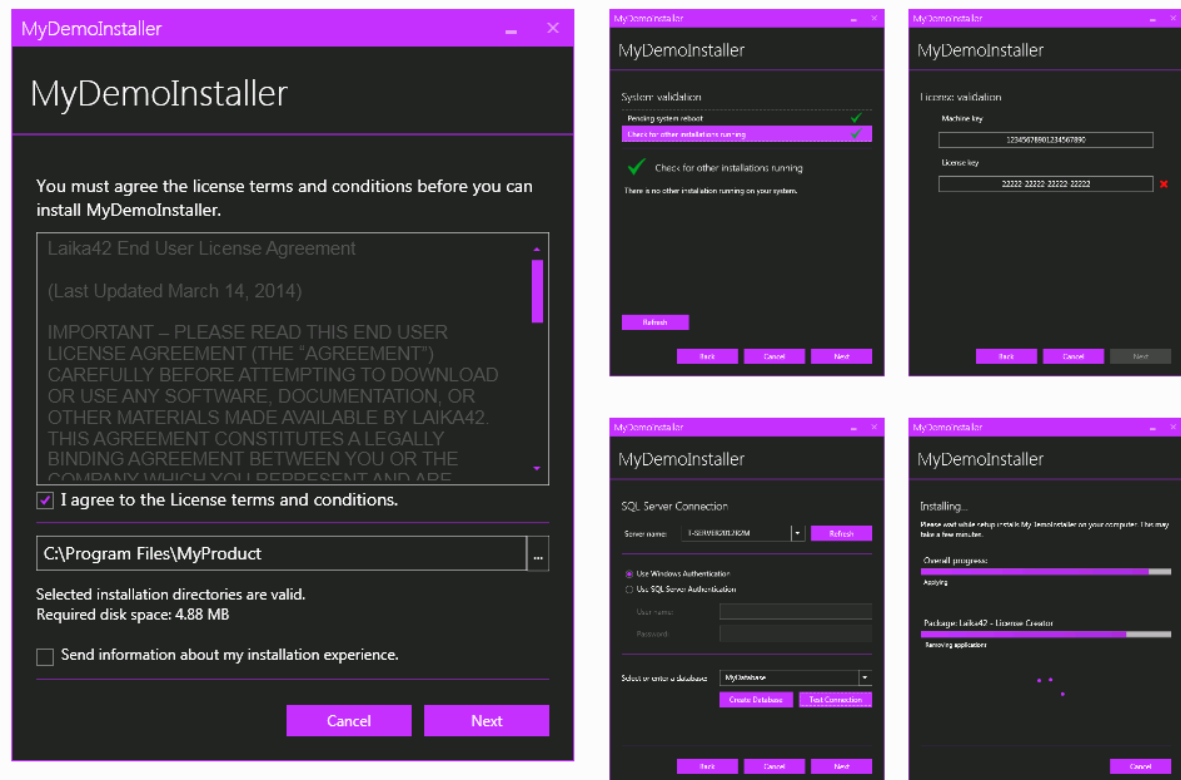
Theme: Purple, ThemeBase: BaseLightSmooth



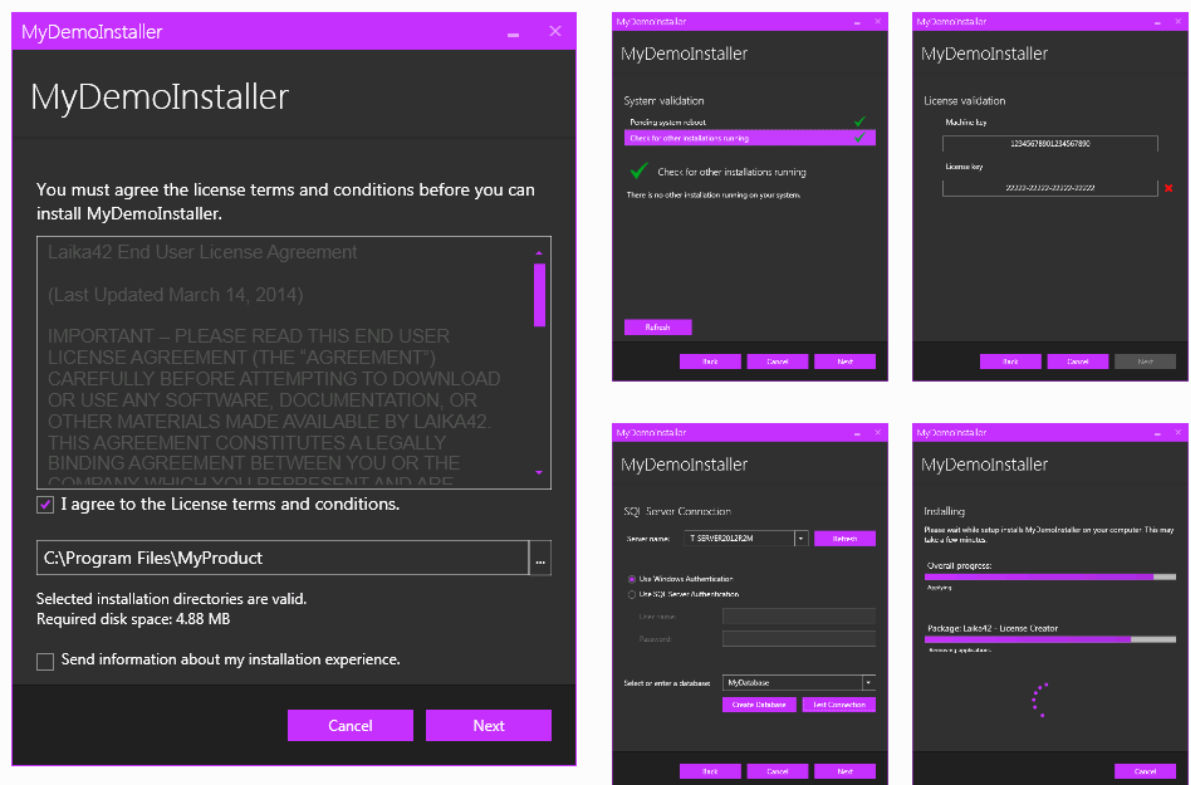
The screenshots show the MyDemoInstaller setup wizard with a purple header and BaseLightSmooth theme. The steps are:

- License Agreement:** Displays the Laika42 End User License Agreement (Last Updated March 14, 2014). The user agrees to the terms, and the installation directory is set to C:\Program Files\MyProduct.
- System Validation:** Checks for system requirements. Pending system reboot and checks for other installations running are both successful.
- License Validation:** Checks the machine key (12345678901234567890) and license key (22222 22222 22222 22222).
- SQL Server Connection:** Configures the connection to the SQL Server. The server name is T-SERVER002R2M, and the user is using Windows Authentication.
- Installing:** Shows the progress of installing the package Laika42 - License Creator.

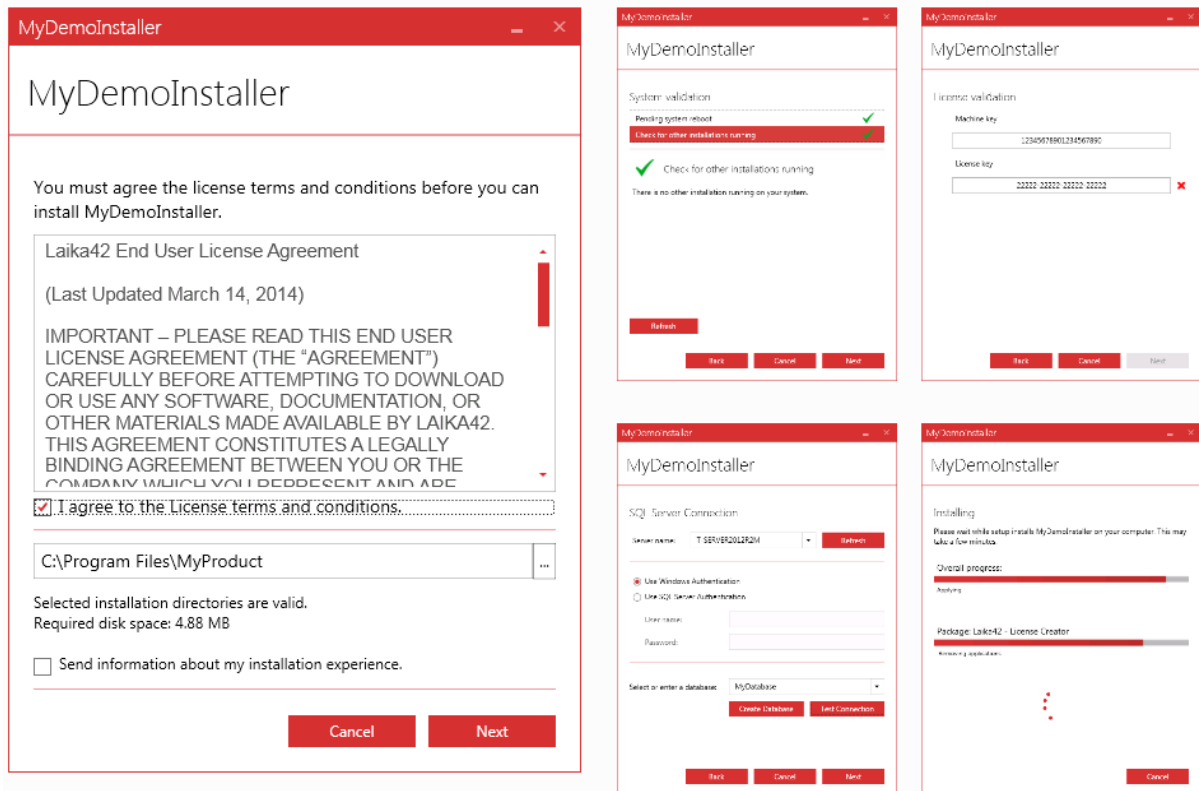
Theme: Purple, ThemeBase: BaseDark



Theme: Purple, ThemeBase: BaseDarkSmooth



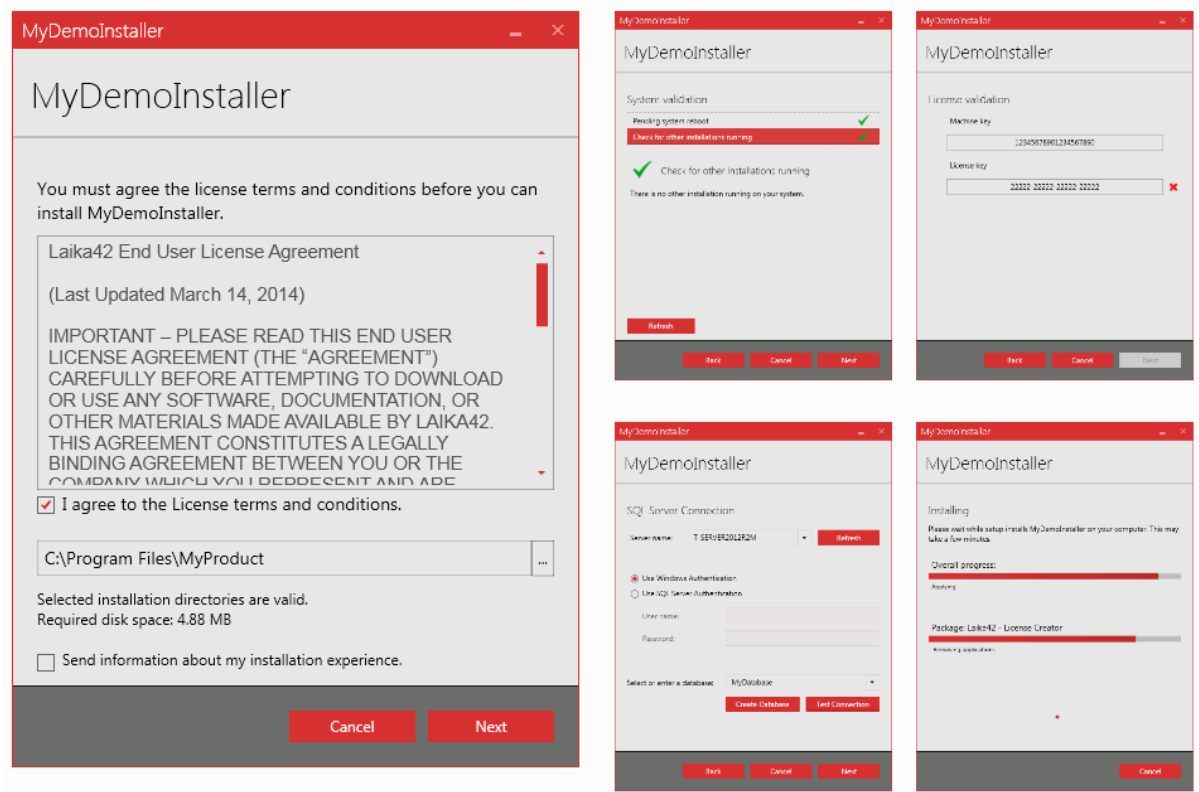
Theme: Red, ThemeBase: BaseLight



The screenshots show the MyDemoInstaller installation wizard with a red theme and BaseLight theme base. The steps are:

- License Agreement:** Displays the Laika42 End User License Agreement (Last Updated March 14, 2014). The user must agree to the terms and conditions. The selected installation directory is C:\Program Files\MyProduct. The required disk space is 4.88 MB.
- System Validation:** Checks for other installations running. The status is "Check for other installations running" (green checkmark). There is no other installation running on your system.
- License Validation:** Checks the machine key and license key. The machine key is 12345678901234567890. The license key is 22222 22222 22222 22222 (red X).
- SQL Server Connection:** Selects the server name (T-SERVER2012R2M). The user must enter a user name and password. The database is MyDatabase.
- Installing:** Shows the overall progress bar and the package Laika42 - License Creator. The status is "Installing application".

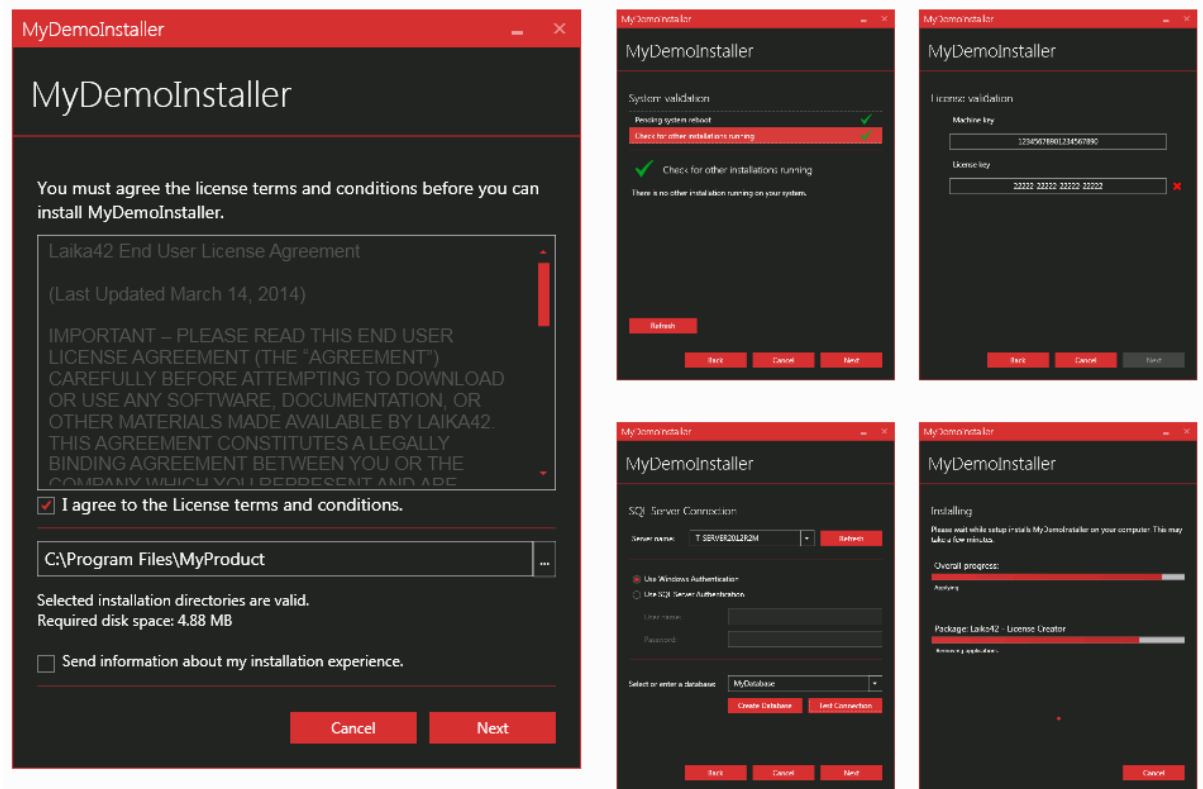
Theme: Red, ThemeBase: BaseLightSmooth



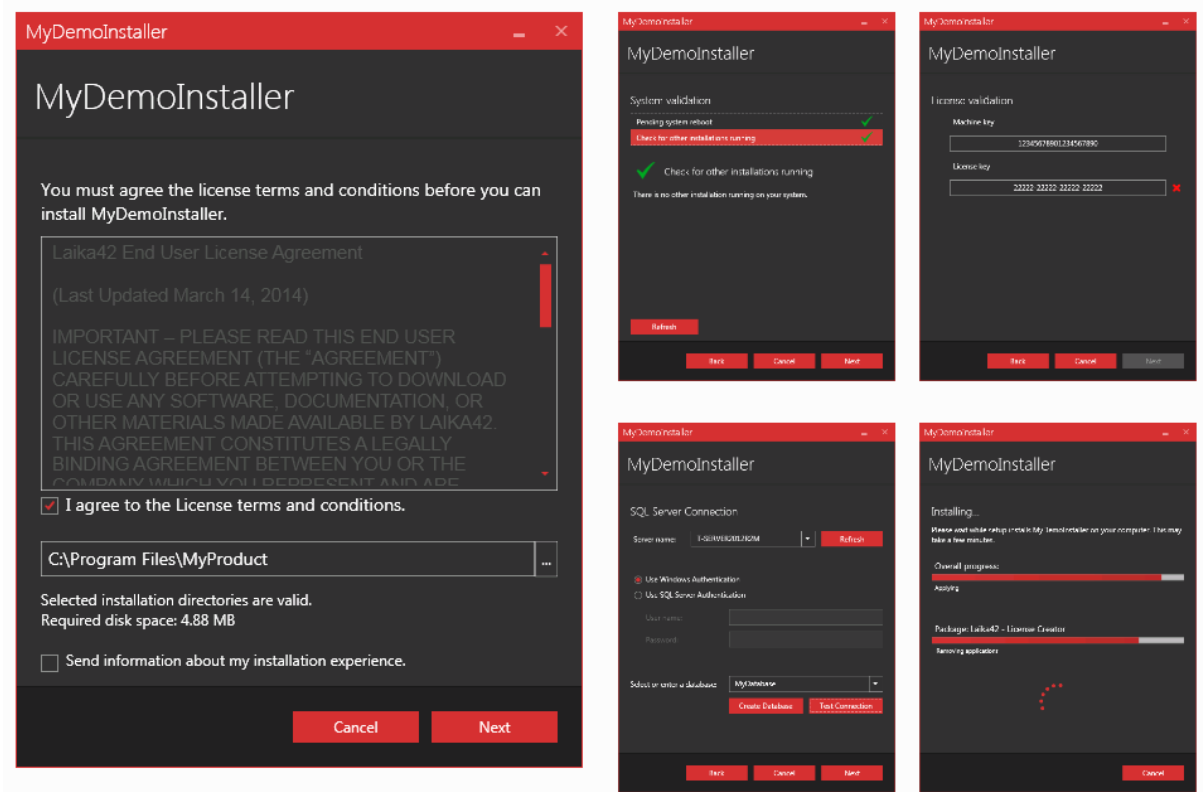
The screenshots show the MyDemoInstaller installation wizard with a red theme and BaseLightSmooth theme base. The steps are:

- License Agreement:** Displays the Laika42 End User License Agreement (Last Updated March 14, 2014). The user must agree to the terms and conditions. The selected installation directory is C:\Program Files\MyProduct. The required disk space is 4.88 MB.
- System Validation:** Checks for other installations running. The status is "Check for other installations running" (green checkmark). There is no other installation running on your system.
- License Validation:** Checks the machine key and license key. The machine key is 12345678901234567890. The license key is 22222 22222 22222 22222 (red X).
- SQL Server Connection:** Selects the server name (T-SERVER2012R2M). The user must enter a user name and password. The database is MyDatabase.
- Installing:** Shows the overall progress bar and the package Laika42 - License Creator. The status is "Installing application".

Theme: Red, ThemeBase: BaseDark

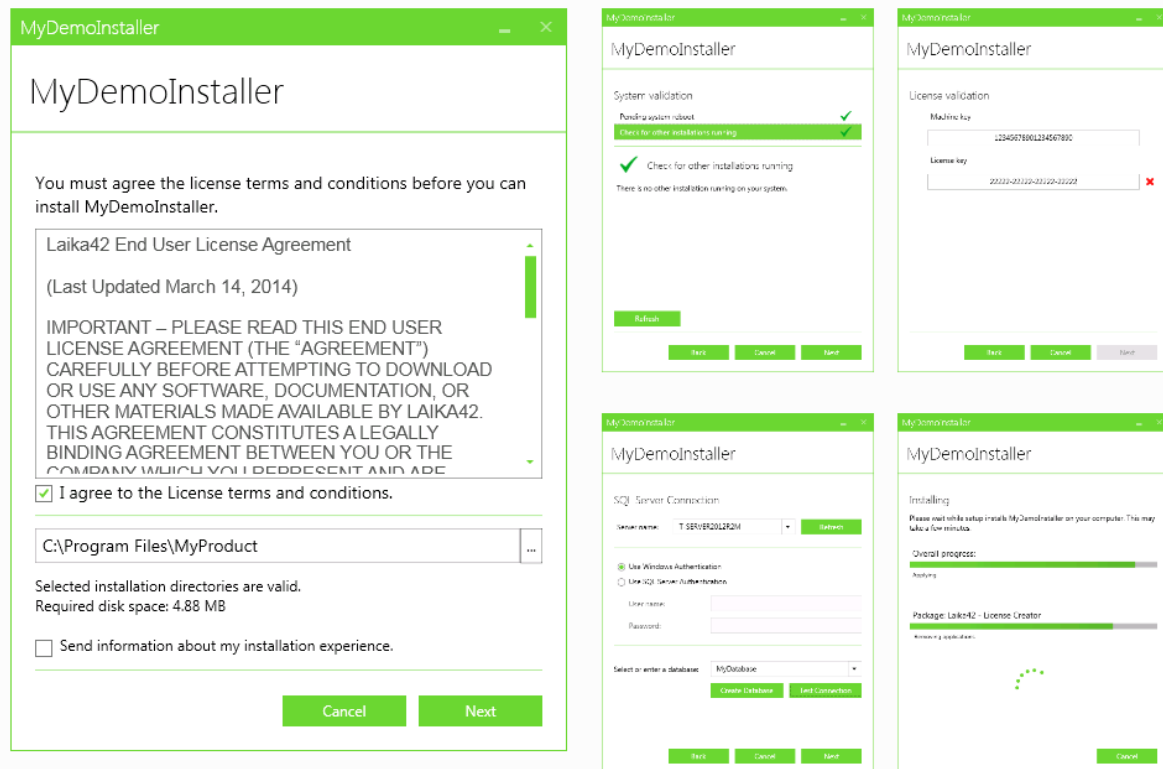


Theme: Red, ThemeBase: BaseDarkSmooth





Theme: Green, ThemeBase: BaseLight



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☒ I agree to the License terms and conditions.

C:\Program Files\MyProduct

Selected installation directories are valid.  
Required disk space: 4.88 MB

☐ Send information about my installation experience.

**MyDemoInstaller**

**System validation**

Pending system reboot ☒

☒ Check for other installations running

There is no other installation running on your system.

**MyDemoInstaller**

**License validation**

Machine key: 12345678901234567890

License key: 22111-21122-21122-21122 ☒

**MyDemoInstaller**

**SQL Server Connection**

Server name: T-SERVER2012R2M

☒ Use Windows Authentication  
☐ Use SQL Server Authentication

User name:   
Password:

Select or enter a database: MyDatabase

**MyDemoInstaller**

**Installing**

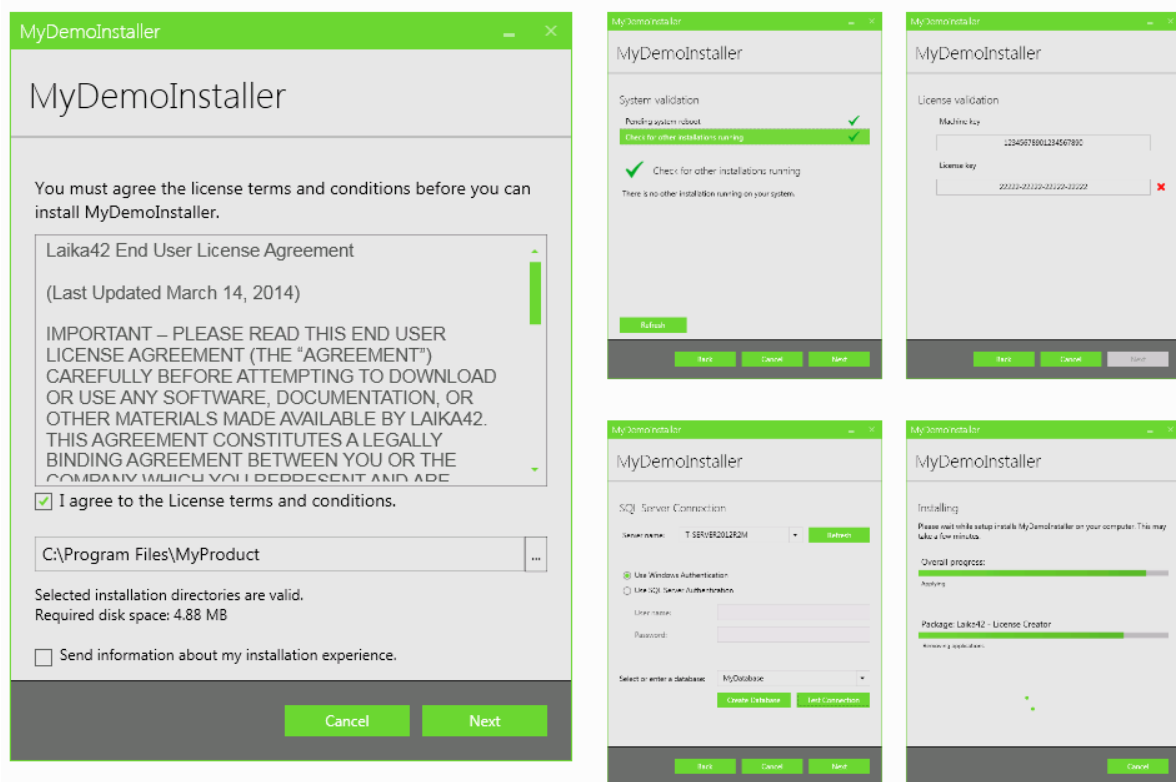
Please wait while setup installs MyDemoInstaller on your computer. This may take a few minutes.

Overall progress:

Package: Laika42 - License Creator

Removing application...

Theme: Green, ThemeBase: BaseLightSmooth



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C:\Program Files\MyProduct

Selected installation directories are valid.  
Required disk space: 4.88 MB

☐ Send information about my installation experience.

**MyDemoInstaller**

**System validation**

Pending system reboot ☒

☒ Check for other installations running

There is no other installation running on your system.

**MyDemoInstaller**

**License validation**

Machine key: 12345678901234567890

License key: 22111-21122-21122-21122 ☒

**MyDemoInstaller**

**SQL Server Connection**

Server name: T-SERVER2012R2M

☒ Use Windows Authentication  
☐ Use SQL Server Authentication

User name:   
Password:

Select or enter a database: MyDatabase

**MyDemoInstaller**

**Installing**

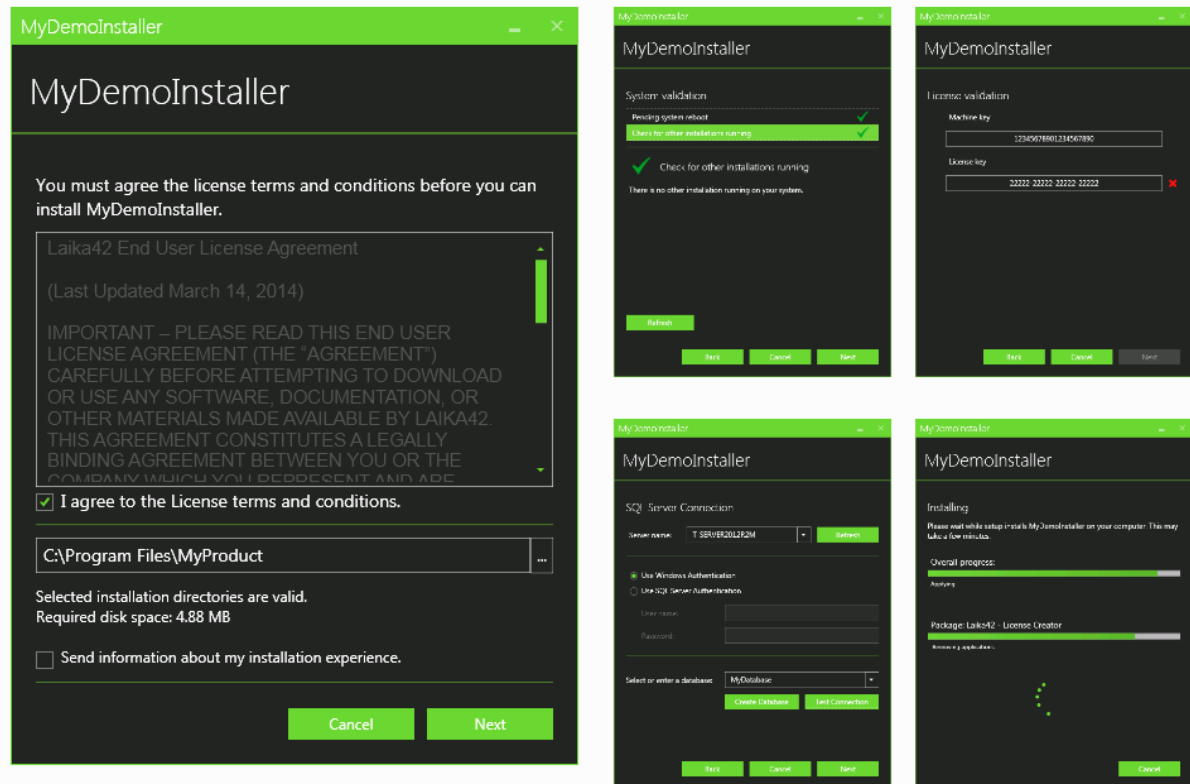
Please wait while setup installs MyDemoInstaller on your computer. This may take a few minutes.

Overall progress:

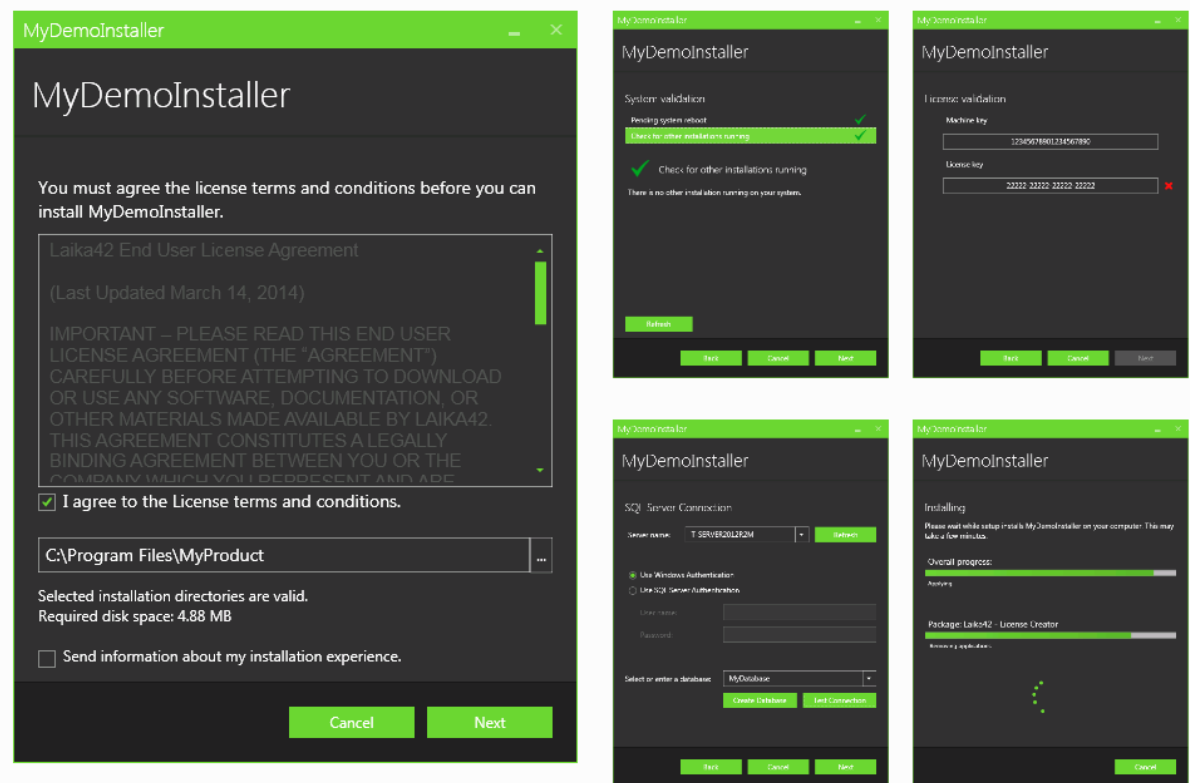
Package: Laika42 - License Creator

Removing application...

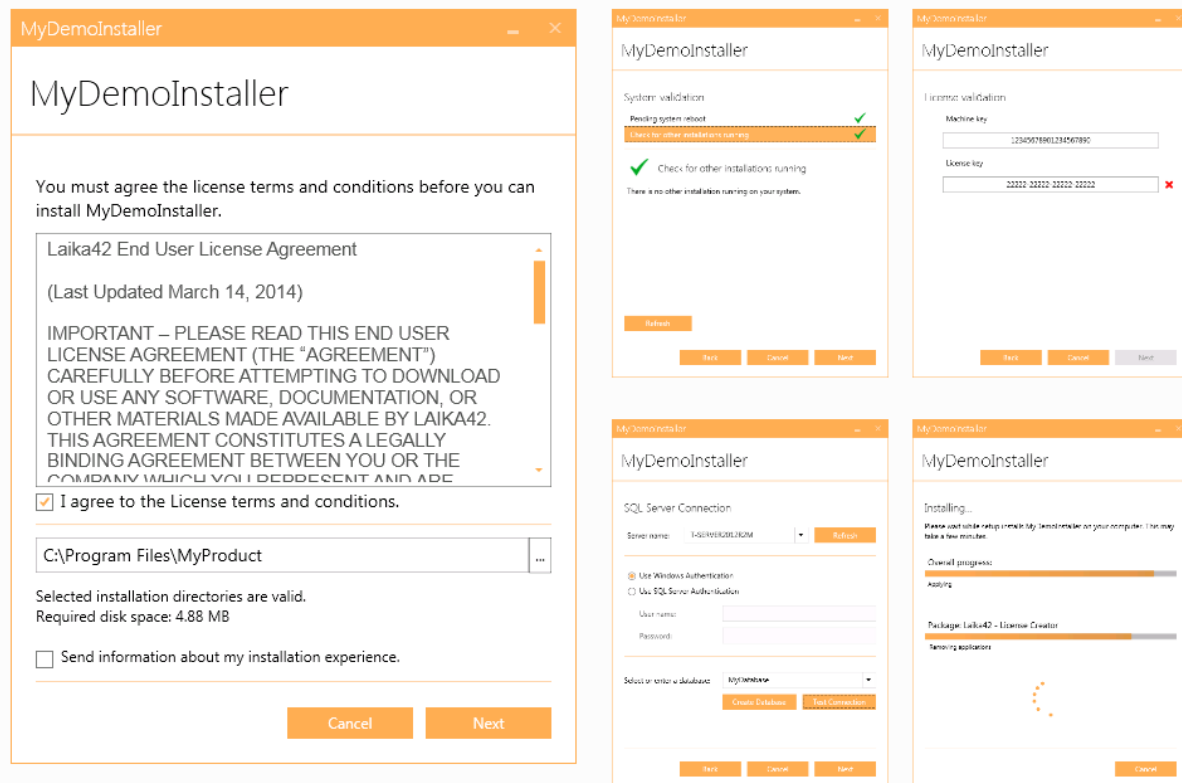
Theme: Green, ThemeBase: BaseDark



Theme: Green, ThemeBase: BaseDarkSmooth



Theme: Orange, ThemeBase: BaseLight



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☒ I agree to the License terms and conditions.

C:\Program Files\MyProduct

Selected installation directories are valid.  
Required disk space: 4.88 MB

☐ Send information about my installation experience.

Cancel Next

**MyDemoInstaller**

**System validation**

Pending system reboot ☒  
Check for other installations running ☒

☒ Check for other installations running  
There is no other installation running on your system.

Refresh

Back Cancel Next

**MyDemoInstaller**

**License validation**

Machine key  
12345678901234567890

License key  
22222 22222 22222 22222

Back Cancel Next

**MyDemoInstaller**

**SQL Server Connection**

Server name: T-SQLSERVER\LOCALM Refresh

☒ Use Windows Authentication  
☐ Use SQL Server Authentication

User name:  
Password:

Select or enter a database: MyDatabase  
Create Database Test Connection

Back Cancel Next

**MyDemoInstaller**

**Installing...**

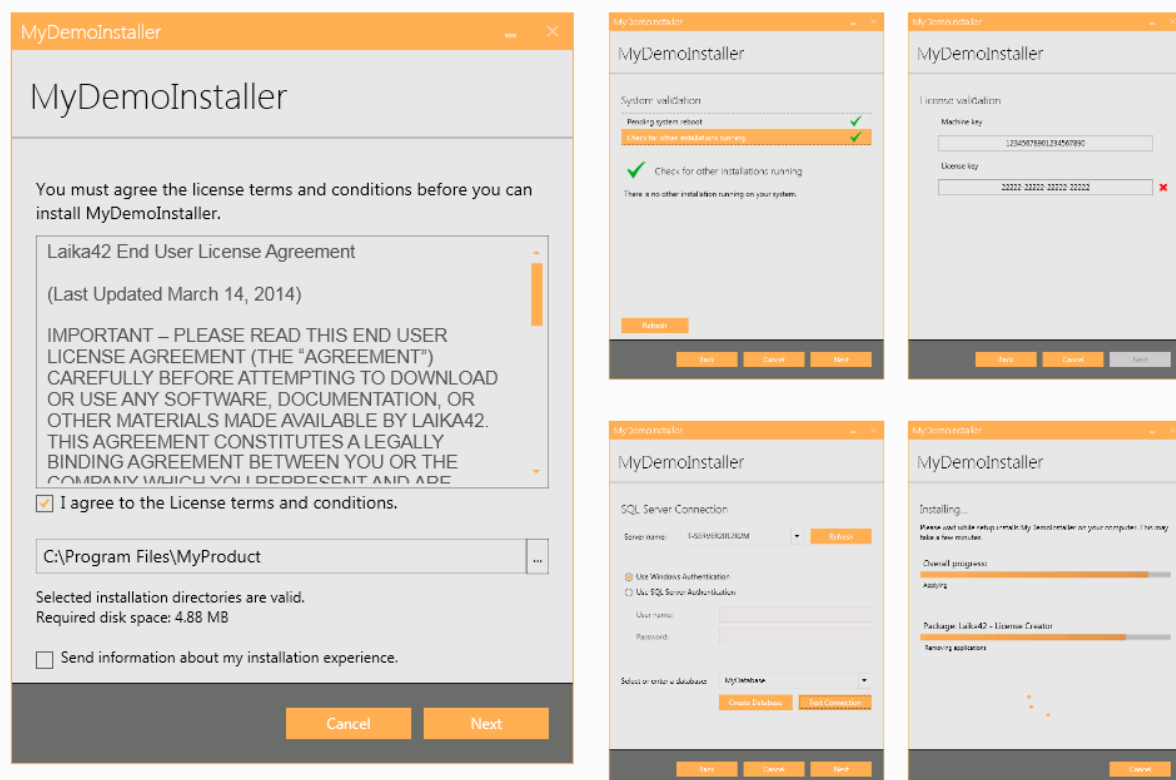
Please wait while setup installs MyDemoInstaller on your computer. It may take a few minutes.

Overall progress:  
Adding

Package: Laika42 - License Creator  
Removing applications

Cancel

Theme: Orange, ThemeBase: BaseLightSmooth



**MyDemoInstaller**

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☒ I agree to the License terms and conditions.

C:\Program Files\MyProduct

Selected installation directories are valid.  
Required disk space: 4.88 MB

☐ Send information about my installation experience.

Cancel Next

**MyDemoInstaller**

**System validation**

Pending system reboot ☒  
Check for other installations running ☒

☒ Check for other installations running  
There is no other installation running on your system.

Refresh

Back Cancel Next

**MyDemoInstaller**

**License validation**

Machine key  
12345678901234567890

License key  
22222 22222 22222 22222

Back Cancel Next

**MyDemoInstaller**

**SQL Server Connection**

Server name: T-SQLSERVER\LOCALM Refresh

☒ Use Windows Authentication  
☐ Use SQL Server Authentication

User name:  
Password:

Select or enter a database: MyDatabase  
Create Database Test Connection

Back Cancel Next

**MyDemoInstaller**

**Installing...**

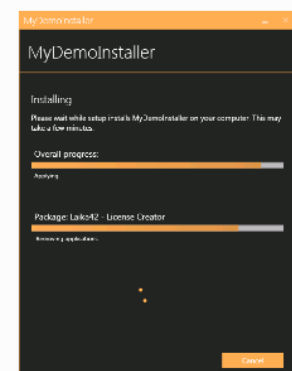
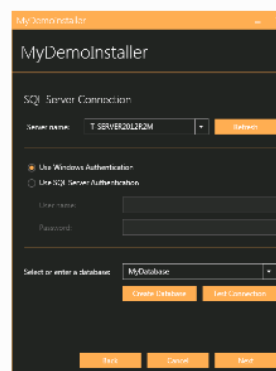
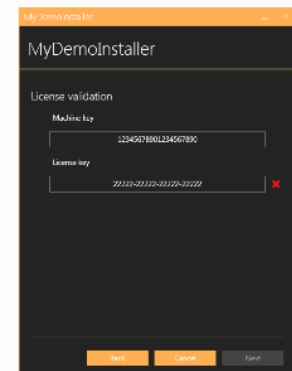
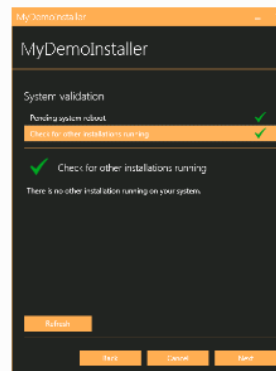
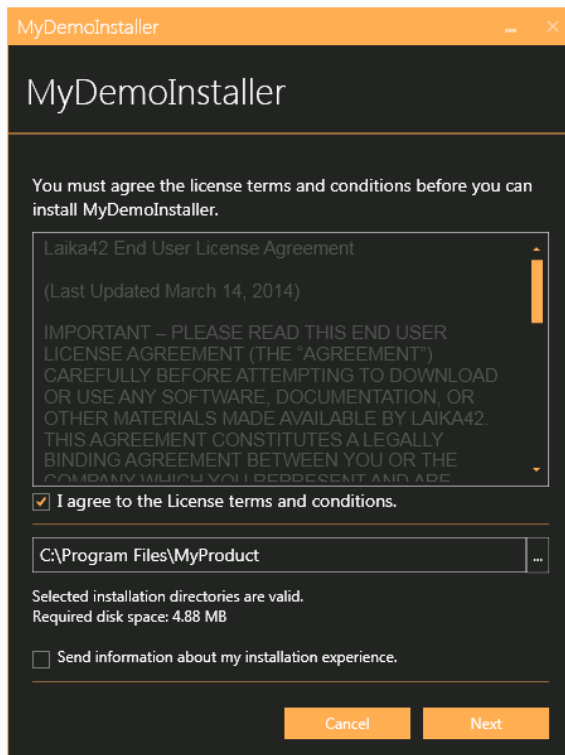
Please wait while setup installs MyDemoInstaller on your computer. It may take a few minutes.

Overall progress:  
Adding

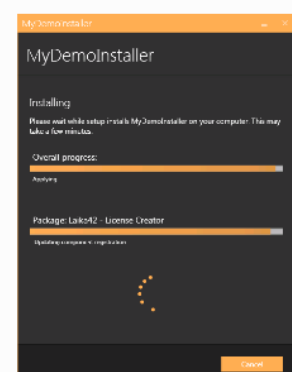
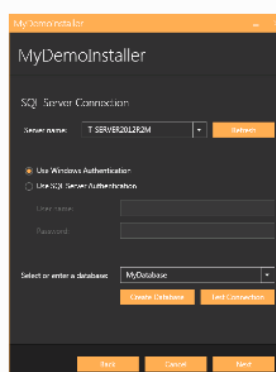
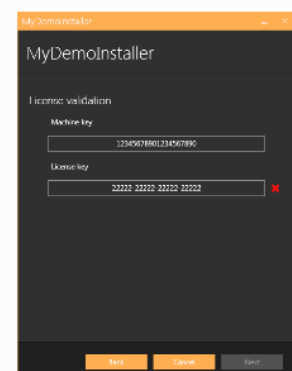
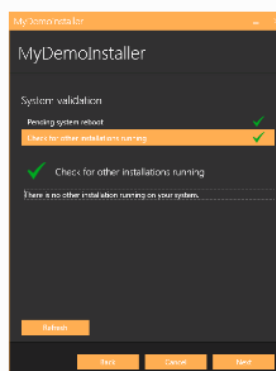
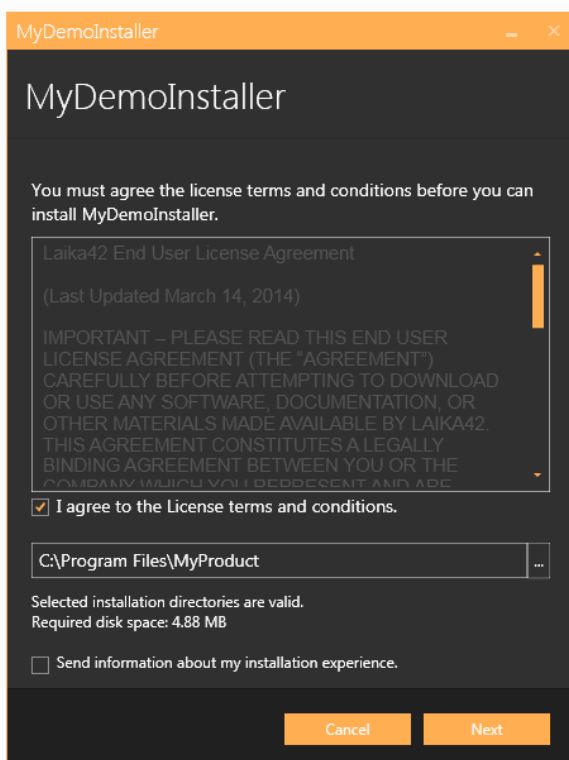
Package: Laika42 - License Creator  
Removing applications

Cancel

Theme: Orange, ThemeBase: BaseDark



Theme: Orange, ThemeBase: BaseDarkSmooth



Theme: Blue, ThemeBase: BaseLight

The installation wizard consists of five steps:

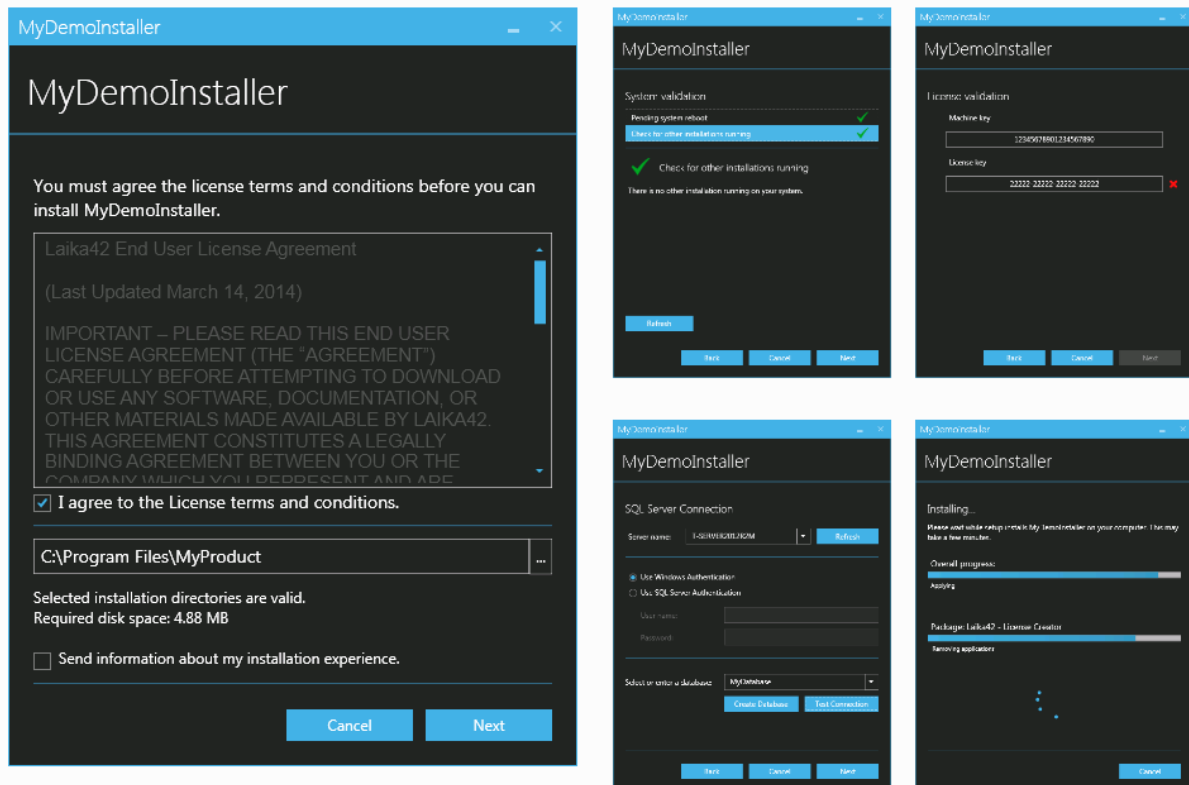
- Welcome Screen:** Displays the title "MyDemoInstaller" and a message: "You must agree the license terms and conditions before you can install MyDemoInstaller." It includes a scrollable text area for the "Laika42 End User License Agreement" (Last Updated March 14, 2014) and a checkbox "I agree to the License terms and conditions." Below this is a text field for the installation path, currently showing "C:\Program Files\MyProduct". It also states "Selected installation directories are valid. Required disk space: 4.88 MB" and has an unchecked checkbox "Send information about my installation experience." Buttons for "Cancel" and "Next" are at the bottom.
- System Validation:** Shows a "System validation" section with three items: "Pending system reboot" (checked), "Check for other installations running" (checked), and "Check for other installations running" (checked). A message states "There is no other installation running on your system." Buttons for "Back", "Cancel", and "Next" are at the bottom.
- License Validation:** Shows a "License validation" section with fields for "Machine key" (12345678901234567890) and "License key" (2222 2222 2222 2222). The license key field has a red "X" next to it. Buttons for "Back", "Cancel", and "Next" are at the bottom.
- SQL Server Connection:** Shows an "SQL Server Connection" section with a dropdown for "Server name" (T-SERVER2012R2M) and a "Database" dropdown (MyDatabase). It has checkboxes for "Use Windows Authentication" (selected) and "Use SQL Server Authentication". Fields for "User name" and "Password" are present. Buttons for "Create Database" and "Test Connection" are at the bottom.
- Installing:** Shows an "Installing" section with a progress bar and a message: "Please wait while setup installs MyDemoInstaller on your computer. This may take a few minutes." It also shows a "Package: Laika42 - License Creator" progress bar and a "Removing applications" section with a circular progress indicator. A "Cancel" button is at the bottom.

Theme: Blue, ThemeBase: BaseLightSmooth

The installation wizard consists of five steps, similar to the first theme but with a smoother theme base:

- Welcome Screen:** Similar to the first step, but with a smoother background and slightly different button styles.
- System Validation:** Similar to the second step, but with a smoother background.
- License Validation:** Similar to the third step, but with a smoother background.
- SQL Server Connection:** Similar to the fourth step, but with a smoother background.
- Installing:** Similar to the fifth step, but with a smoother background.

Theme: Blue, ThemeBase: BaseDark



Theme: Blue, ThemeBase: BaseDarkSmooth

