

InstallKey

Quick Start Guide

**Installation Key
And
Validation Framework**

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May 17, 2015

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1. Prerequisites

These prerequisites are a minimum guideline for installation and are a place to start.

Confirm that the following lists of prerequisites are met on the systems that will be running the components of InstallKey. Additional detailed installation information can be found in the InstallKey Developer Guide.

General Knowledge

It is assumed that you have a basic knowledge about the Windows operating system, IIS, SQL Server, C#/VB.Net and ASP.Net web applications.

InstallKey is a web application written entirely in .Net 4.0 following Microsoft's coding standards and best practices. If you are comfortable administering the Windows operating system and building and deploying web applications based upon the .Net framework, you will have no trouble installing, configuring and using the InstallKey server and libraries.

Windows Requirements (Web Server)

The InstallKey web server components are written for use with any of these versions of the Windows operating systems or newer.

- Windows 7 SP1 Professional or Enterprise
- Windows Server 2008R2 SP1
- Windows 8.1 Pro or Enterprise
- Windows Server 2012
- Windows Server 2012R2

.Net Framework

The .Net Framework version 4.0 must be installed prior to installing InstallKey. Depending upon the version of Windows, the .Net Framework 4.0 may be a separate download, or it may be available as an option within the Windows Add/Remove Programs applet in the Windows Control Panel. If added as a feature from the Windows Control Panel applet, you must also enable the WCF Services HTTP Activation feature.

Internet Information Services

IIS must be installed on your web server prior to installing InstallKey. IIS is included with various editions of the Windows desktop and server operating systems, but is not installed by default. It can be added any time from the Add/Remove Programs applet in the Windows Control Panel.

Once IIS is installed, support for ASP.Net 4.x features in IIS must also be enabled.

SQL Server

The InstallKey web application must have access to an Enterprise, Standard or Express edition of SQL Server 2008R2 or newer. The SQL Server instance does not have to be on the same machine as the web application.

Administrative rights to SQL Server will be needed to create the database and database login. Once the database has been created, a login with minimal security access rights can be used for the connection to the database from the InstallKey application.

The database must have mixed mode authentication enabled to proceed with the quick start steps below. (Windows Authentication can also be used, See the developer guide for information about how to use SQL Server with Windows Authentication.)

Windows Requirements (Client Side)

The InstallKey Client side components (the dlls that you redistribute with your applications) are written for use with the .Net Framework 4.0. The client side libraries will work with any version of Windows that supports the .Net Framework 4.0 or later.

2. Installation

Follow these steps to install and run InstallKey. Complete installation details and steps can be found in the InstallKey Developer Guide.

Database Creation

Follow the steps below using SQL Server Management Studio (SSMS)

1. Confirm that your database server is running in Mixed Mode Authentication.
2. Create a new empty database named InstallKey.
3. Unzip the Database.zip file
4. Execute the InstallKeyDatabase.sql script file on the database. This will create the database schema and load the initial fixed content.
5. Execute the InstallKeyUser.sql script on the database. This will create a SQL login and associate the login with the InstallKey database. This login will be used to connect to the database from the web application.

Create the Application in IIS

To create the InstallKey web application, follow these steps. These steps assume a default installation of IIS with the Default Web Site and a default installation of the .Net Framework 4.0 with the ASP.Net v.4.0 application pool.

1. Unzip the InstallKeyWeb.zip file.
2. Create the InstallKeyWeb folder on the file system.
C:\inetpub\wwwroot\InstallKeyWeb
3. Copy the files and folders from the zip file into
C:\inetpub\wwwroot\InstallKeyWeb
4. Open IIS Manager, and expand the Default Web Site node in the tree
5. Right Click on the InstallKeyWeb folder and choose the option to Convert to Application
6. In the dialog that appears, confirm that the application pool for this application is using the .Net CLR 4.0 and pipeline mode Integrated.
7. Click the Ok button to create the web application in IIS.

Configure the Database Connection String

It is possible that the database connection string may need some changes that are specific to your environment. Open the web.config file; edit the connection string to connect to the InstallKey database.

If you followed the steps above using the provided database name and SQL scripts, then the Initial Catalog, User ID and Password values should be correct. Confirm that the Data Source is correct for your running instance of SQL Server and edit as necessary.

3. Create and Test a Keyset and a Key

Now that the InstallKey web application is installed, you can create your first keyset and key.

Login

Open a browser window and navigate to the Admin Web Application. If you followed the steps above, the web application can be found at

<http://localhost/InstallKeyWeb>

You should see the login page. Log in to the application using the default admin login credentials.

UserName: Admin

Password: admin

Create Keyset and Sure Key

Create a Keyset and a Sure Key. Full details about creating Keysets, Sure Keys and Properties can be found in the InstallKey Developer Guide documentation.

Client Side Tester

The Client Side Tester is a simple WebForms based application that can be used to test a key by validating it against the server.

Extract the files from the ClientSideTester.zip file and run the LomaCons.InstallKey.ClientSideTester.exe. The tester application will display a form that will allow you to enter the properties of your keyset and the location of the InstallKey validator web service.

If you are running the Client Side Tester on the same machine where you have installed the web server application, and you have followed the steps above, the URL should be

<http://localhost/InstallKeyWeb/Validator.svc>

The keyset name and password values must be the same as those that you used when you created the key. The Keyset Factor and Keyset Validation code are encrypted values that are created dynamically by the InstallKey web application. These values can be found by viewing the properties of the keyset in the Install Key Web application.

After entering the values, click the Validate Against Server button to validate your key. Once validated, the properties of the key will be visible in the Client Side Tester application.

4. Common Issues and Solutions

The most common installation issues are listed below. Additional installation guidelines and tips can be found in the InstallKeyDevGuide.pdf.

Cannot Edit the web.config File

Often it is not possible to edit files directly under the C:\inetpub\ folder, even when logged in as an Administrator. This is security feature of Windows UAC (User Access Control.) There are a few methods that can be used to resolve this. Any one of the following methods can be used to set the database connection string.

- Use IIS Manager to edit the connection string. Open IIS Manager, select the Install Key Web Application, and view the Connection Strings. Edit the connection string for InstallKey and click OK to save the changes. This will change the connection string in the web.config file. This is the most secure method as it does not violate Microsoft UAC security policies.
- Copy the web.config to your My Documents folder or any other folder where UAC allows file editing. Edit the file, save the changes. Copy the file back into folder under C:\inetpub by overwriting and replacing the original file.
- Disable UAC in the local security policy. To disable UAC, open the security policy editor, and find the setting for User Account Control: Turn on Admin Approval Mode. Set this property to disabled and restart the machine. Note, that this method is less secure as this disables UAC. If you choose to use this method, it is recommended that you re-enable this setting after making your edits to the web.config file.

HTTP Error 500.21 or 500.19 – Internal Server Error

You may see this error the first time you open the http://localhost/InstallKeyWeb url in a browser. This error usually indicates that support for ASP.Net 4.0 is not installed in IIS properly.

Follow these steps to resolve

1. Open the Turn Windows Features on or off dialog. This dialog is located in the Add/Remove Programs applet in Control Panel. Confirm that IIS and support for ASP.Net is enabled.
2. If IIS and ASP.Net is enabled, but you still see the error, you may need to register support for ASP.Net 4.0 into IIS. Open a command prompt and run the command below

```
%windir%\Microsoft.NET\Framework64\v4.0.30319\aspnet_regiis.exe -i
```

Web App Does Not Display in the Browser

Even after following and reviewing all the installation steps above, the login web page does not appear when attempting to connect to the web application.

The steps above assume that you are installing the InstallKey web application on a fresh install of Microsoft Windows, and should work in most all installations. However, it is possible that your environment or network administrator has configured the operating system differently such that the web application does not work properly. When there is an error, the InstallKey web application should display detailed error information and exception details which may help in locating the source of the error.

However, there are times where something may be preventing the InstallKey error page from displaying properly. If this occurs, the standard Microsoft ASP.Net error web page can be utilized to see the error. Change the customErrors mode to Off and restart the web site. The

customErrors is configured in the web application's web.config file. Look for a line similar to the one below and change the mode value to Off. Once you have resolved the problem, you can change the mode back to On.

```
...  
<customErrors defaultRedirect="~/ErrorPage.aspx" mode="Off">  
...
```

HTTP Error 404.0 or No Endpoint Listening

If the web application is functioning and you are able to create a keyset and key, but the Client Side Tester fails to connect to the server, first confirm that the Validator.svc service URL is correct. Open a browser window and attempt to connect to <http://localhost/InstallKeyWeb/Validator.svc> This URL should display a standard ASP.Net web page that describes the service.

If this error is happening, then it is likely that .Net WCF Services HTTP Activation is not enabled. InstallKey uses WCF web services over http to process the remote validation requests. This feature of the .Net framework is disabled by default in some Windows operating systems. Confirm that .Net 4.0 (or .Net 4.5) HTTP Activation is enabled in Windows Control Panel | Programs and Features | Turn Windows Features On or Off. In the Windows Feature Dialog, confirm that .Net Framework | WCF Services | HTTP Activation is enabled.

This control panel setting may not be visible if the .Net framework 4.0 was installed separately of the operating system (such as on Windows 7.) You may need to re-install the .Net framework 4.0, IIS or both.

5. Upgrading from Previous Versions

Please consider the following when upgrading from prior versions of InstallKey. As with any upgrade, you should always test the upgrade and have a backup plan before applying the changes to your production environment.

Upgrading from InstallKey version 3.x and 4.x

Because InstallKey 5 is a major upgrade, it is not necessary to uninstall prior versions of InstallKey (versions 3.4 and 4.2)

It is required that you use a new database and web application for InstallKey 5. There is an upgrade path to version 5. However, version 5 is not backwards compatible with prior major releases of InstallKey. For more information about migrating existing Keysets and Keys to InstallKey 5, see the developer guide documentation.

Upgrading from Prior Releases of InstallKey version 5.x

Upgrading the web application from a prior release of version 5.x requires that you apply any database changes, and replace the web application and web config files. You should not have to make changes to IIS or the virtual folders.

As with any upgrade, you should test the upgrade before making any changes to your production environment. At a minimum, you should create a backup of your database and web.config file.

Follow these steps to upgrade your installation of the InstallKey web application. These steps assume that you have followed the steps above to install the prior release of InstallKey and that your web application files were copied into C:\inetpub\wwwroot\InstallKeyWeb.

1. Unzip the Database.zip file.
2. Execute the InstallKeyDatabase.sql script file on the database. This will apply any schema changes and add any additional fixed content to bring your database up to the current release. (It will only apply the necessary changes and will not modify any content or data)
3. Delete all the files under the C:\inetpub\wwwroot\InstallKeyWeb including the web.config file. (Do not delete the C:\inetpub\wwwroot\InstallKeyWeb folder.) It is important that all files and folders from the prior release are removed.
4. Unzip the InstallKeyWeb.zip file.
5. Copy the files and folders from the zip file into C:\inetpub\wwwroot\InstallKeyWeb
6. The database connection string will likely need to be set to the values that are specific to your environment. Open the web.config file; edit the connection string to connect to the InstallKey database.
7. If you have any custom pre-validate or post-validate code, these will need to be updated. To update them, you will need to recompile your code referencing the newest LomaCons.InstallKey.Common.dll assembly and re-install your new dll assembly.
8. If you are exposing the WCF web service endpoints over https, you will need to ensure that you have a valid SSL certificate properly installed, and the https binding configured. Then uncomment the secure endpoints in the web.config.

Validating with Prior Releases of InstallKey version 5.x

Your released applications that use prior versions of the InstallKey 5.x LomaCons.InstallKey.ClientSide.dll to validate keys will be able to validate against the newer

version web application. However, as with any upgrade, you should test prior releases of your application with the new InstallKey web application.

6. More Information and Help

More detailed and complete information can be found in the [InstallKeyDevGuide.pdf](#) documentation. Other answers to frequently asked questions can be found on the FAQ page on the www.lomacons.com website.