NiceLabel Web Printing Installation Guide

www.nicelabel.com

1 Contents

2 Architecture

2.1 Deployment

2.1.1 Overview

The role of Control Center is to define Web Printing users and to host their solution files.

> **TIP:** In NiceLabel 2019, solution files (.nsln extension) can be used with labels and/or forms. Even label files alone can be used as a solution without creating a form. In such case, a predefined print dialog is used for label printing.

When a Web Printing user logs in to the server, the application (solution) runs using the NiceLabel Web Client application.

Typically, Web Printing user print labels that contain variable data. The selected label template takes the provided data and displays its preview in a form. Labels are printed with the selected data. The data usually originates from a Microsoft SQL database hosted within the company's information infrastructure.

> NOTE: Data source is not limited to Microsoft SQL. Data can be stored using any type of relational database.

The application running in Web Client doesn't communicate directly with the database. All communication is channeled through the Web Printing site. When a database record is required, the applications sends a request to the Web Printing site, which redirects it to the database server. The response travels in the opposite direction. In the same way, the Web Printing site records print events and stores the data in database.

> NOTE: Web Printing can access 32-bit databases even if the Web Printing site runs under 64 bits. Web Printing works with 32-bit databases via Web Printing proxy service.

2.1.2 Installation Scenarios

Depending on the architecture of the solution as well as on the hardware being used, the server components (NiceLabel Control Center, Web Printing site, and Microsoft SQL Server) can all be installed on a single computer or on separate systems. These two options depend on a number of factors, such as:

- Can you allow the Web Printing application to be installed as a part of the corporate information infrastructure at all? If the company policy prevents you from any local installation, Web Printing will be hosted outside the company network. In this case, the relevant databases (those which are used for label printing) are copied into the hosted environment.

- Does the company infrastructure support the installation of server components on dedicated servers?

- Who are the Web Printing users that are connecting to the server? Can you trust these users by default (e.g., are they domain users, or company staff) or are they external users connecting to server using an Internet connection?

- Can the existing Microsoft SQL server be used for Web Printing data or do you need to use a new Microsoft SQL server?

- Do you plan to allow Web Printing to connect to the company's database? If not, the existing data must be offloaded to a dedicated Microsoft SQL server. You will have to make sure the databases are synchronized.

- Will Web Printing be used as a stand-alone application with its own login system, or will another existing application handle the login and embed Web Printing into an existing web page?
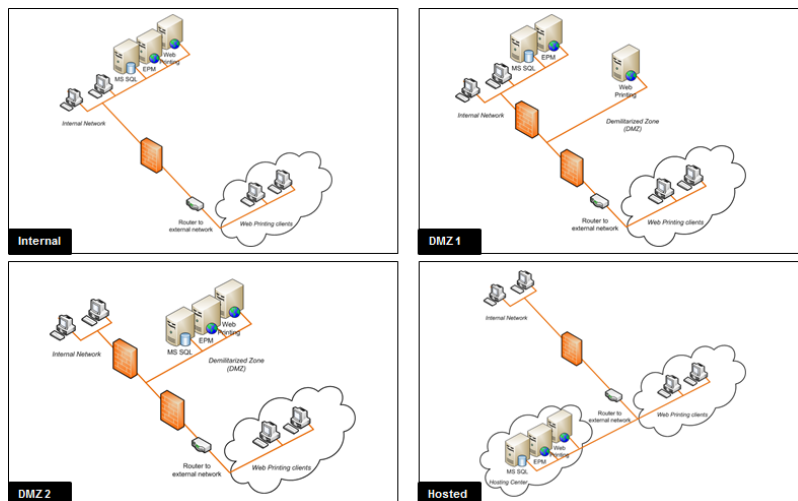
2.1.3 Security Suggestions

This section gives recommendations on how to protect the connecting users, and the integrity of data and infrastructure.

In most cases, Web Printing site will allow external users to connect and print labels, so it will be exposed to the Internet. You don't want to reveal any confidential information to unwanted users. With security taken as the highest priority, the application must be reliable and trustworthy, minimizing the risk of security breaches. The Web Printing site encrypts important configuration data on the disk, and secures the communication to the application running in the browser.

However, it's not just how the Web Printing product was developed and tested but also how you install it and place it into action.

Best security practices:

- **Regularly install security updates from Microsoft Windows Update.** Updates for the IIS are particularly important, because you expose the Web Printing site to the Internet.

- **Set up a firewall/proxy.** Only open the services/ports which must be opened to the public, such as port 80 for IIS.

- **Limit access privileges to the Document Storage.** This is a WebDAV-based file repository running on the same server as NiceLabel Control Center. It hosts the solution files. By default, anybody can access Storage Server at `\\server@8080\DavWWWRoot`

- **Install Web Printing site in the DMZ.** Minimize damage in case of a compromised server.

- **Limit the SQL user permissions.** Microsoft SQL Server user account that the Web Printing site will use to connect to the database should have access to the Control Center database (NiceAN by default) only. If somebody gains access to the Microsoft SQL Server, it will be limited to the database, and other parts of the Microsoft SQL Server will not be reachable by this user's privileges.

- **Enable user authentication for NiceLabel Control Center.** Only allow login for trustworthy administrative users. By default, anybody that connects has administrative privileges.

- **Set up the Web Printing site to be accessible over a secure link only.** Enable the HTTPS/SSL protocol so that nobody can eavesdrop on the communication between the user and the server. For more details, see the chapter Installing Web Printing Site with HTTPS/SSL Support.

SCENARIO	DESCRIPTION

All server components are installed on the same server	In this case you either:
	
	 - Trust the connecting users completely. The software is installed on the company's information infrastructure – perhaps even on the existing Web server. The existing Microsoft SQL server can be used to host the Web Printing database. You will have to grant access to the Web Printing site for the connecting Web printing users.
	
	     - If these users belong to internal company staff, they might already have the access to the Web Printing site.
	
	     - If these are external users connecting over the internet, configure your firewall/proxy to allow inbound connections.
	
	 - Do not trust the connecting users. Do not install Web Printing on the company's information infrastructure. Instead, contact a server-hosting company and install all components outside your company's infrastructure. If the Web printing users need the data from your company's databases, you will have to make the data available to Web Printing site.

Control Center and Web Printing site installed on the same server, Microsoft SQL installed on a separate server	In this case, the Microsoft SQL server is installed on a separate server. This can either be an existing Microsoft SQL server which already hosts some databases, or a new server. You expect a busy web server and/or Microsoft SQL server, and plan to use dedicated machines for web and data processing.
All server components installed on separate servers, Web Printing site in DMZ	In this case, the installations should be distributed because of performance issues (Web server and Microsoft SQL server running on separate servers). More importantly, the Web Printing site is not installed on your internal infrastructure.
	External Internet users are going to connect to your Web Printing server – the server exposed to Internet does not meet your safety standards. Proxy server/firewall can be placed in front of the Web Printing site as the first line of defense. To establish a robust installation of the Web Printing site, set it up in a DMZ (demilitarized zone). This is a physical or logical sub-network that will make the Web Printing site accessible to external (untrusted) users. If an attacker succeeds to access the server, he will only have access to the equipment in the DMZ, but not the company's network.
	Web Printing site must still access the internal network to load the solution and get the data for label printing. This involves opening communication to the back-end Microsoft SQL server (a few opened dedicated ports).
	NOTE: This deployment scenario is one of the reasons why Web Printing site requires a SQL-level user name to connect to the Control Center database (not a domain-level user name). If the attacker compromises the connection to the SQL server, he will only have the credentials to the Control Center database and no harm can be done to the rest of the databases or other internal servers.
Other combinations	Other combinations of server installations are possible. Each server component can be installed on a different server, just bear in mind that they require firewall/proxy rules in order to see each other: • Control Center must have access to the Microsoft SQL server (Windows authentication, local Control Center Windows users (EPM_USER, EPM_DBADMIN) are created on the server where Microsoft SQL Server is installed) • Web Printing site must have access to the Microsoft SQL server, where Control Center database is installed (SQL authentication is used, so the Web Printing site can be installed outside of the company's network and domain)

2.2 Overview

NiceLabel Web Printing is a server/client based solution primarily designed for barcode label printing. NiceLabel Web Printing belongs to the NiceLabel LMS products. To use Web Printing, Control Center must be installed and activated.

On the client side, PowerForms (one of the NiceLabel 2019 product levels) is used for label designing and solution building.
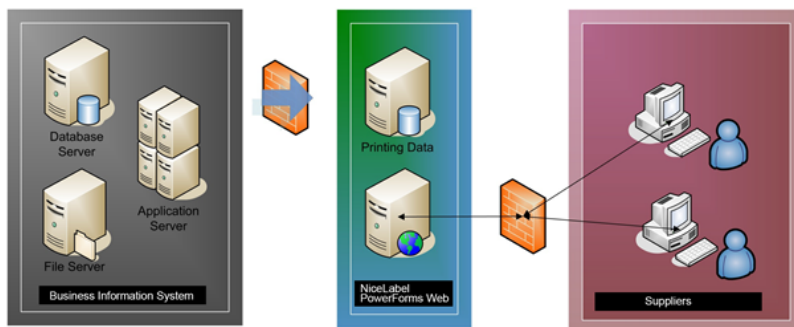
> NOTE: For more information about label designing and deployment, see chapter Deployment.

On the server side, Control Center and Web Printing both run as web applications which handle licensing for Web Printing users and distribute their printing applications. All printing activities are logged in the Control Center database. The administrator can use a standard Internet browser to:

- manage the Control Center
- manage licenses
- access solution files in the web-based storage repository (Document Storage)
- set up and manage Web Printing users
- assign solutions to users
- view solution printing history

To summarize, the Web Printing environment consists of the below listed components. All components are added to the existing Control Center product.

- Server components: NiceLabel Web Printing site.
- Design components: NiceLabel Designer running as PowerForms product level.
- Print client components: installed on each workstation that prints labels.

3 Checklists

3.1 Pre-installation Checklist

	SERVER CHECKLIST
☐	**Access to Windows accounts with administrative privileges and SQL system administrator** To install NiceLabel software you must have access to the user with administrative privileges: 1. On the Windows Server machine with Internet Information Services role where you will install NiceLabel Web Printing. 2. On the SQL Server, so the Control Center database can be added to the SQL Server. The entered user must have the owner role defined on the database. Configuring Microsoft SQL Server.
☐	**Meeting prerequisites for IIS (Internet Information Services) Web server** Installing IIS Web Server for Web Server Roles that you have to enable in the IIS.
☐	**Meeting prerequisites for Microsoft SQL Server** NOTE: This step is only necessary when you do not install Web Printing component on the same computer as Control Center. List of changes that you need to complete on Microsoft SQL Server: • Enable mixed mode authentication in the SQL Server: Windows authentication and SQL Server authentication. • Add a new SQL user. • Apply security permissions for the new SQL user to be able to access Control Center database, where the solution files for Web Printing have been stored.

3.2 Post-installation Checklist

	CLIENT CHECKLIST

☐ **If using proxy server, exclude local traffic from proxy**

Bypass the proxy server for local addresses, or the client might not get the license from NiceLabel Control Center. This makes files in Document Storage unavailable. For more information, see Knowledge Base article KB163.
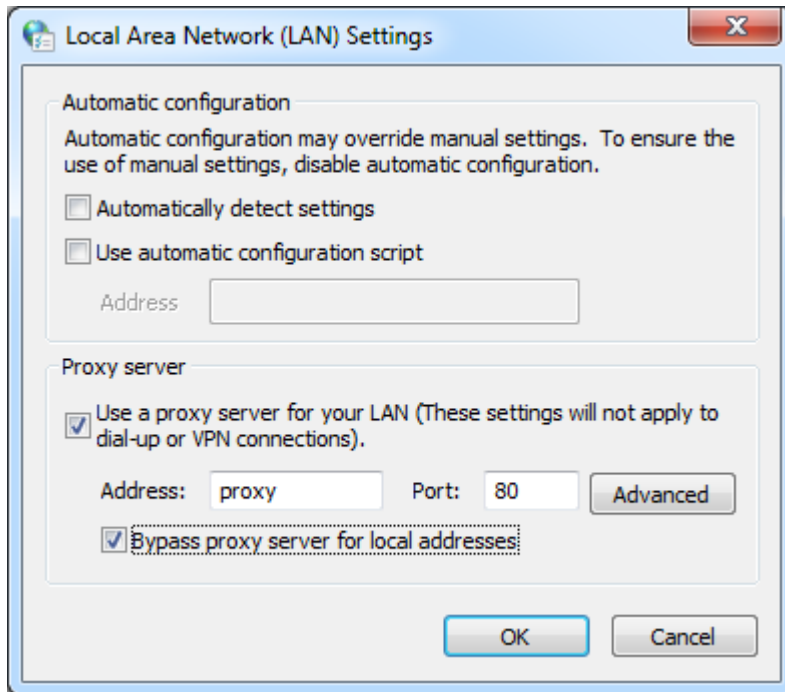
☐ **Add Control Center to the Trusted sites**

If you have troubles using NiceLabel Control Center, add it to the list of Trusted Sites in your browser.
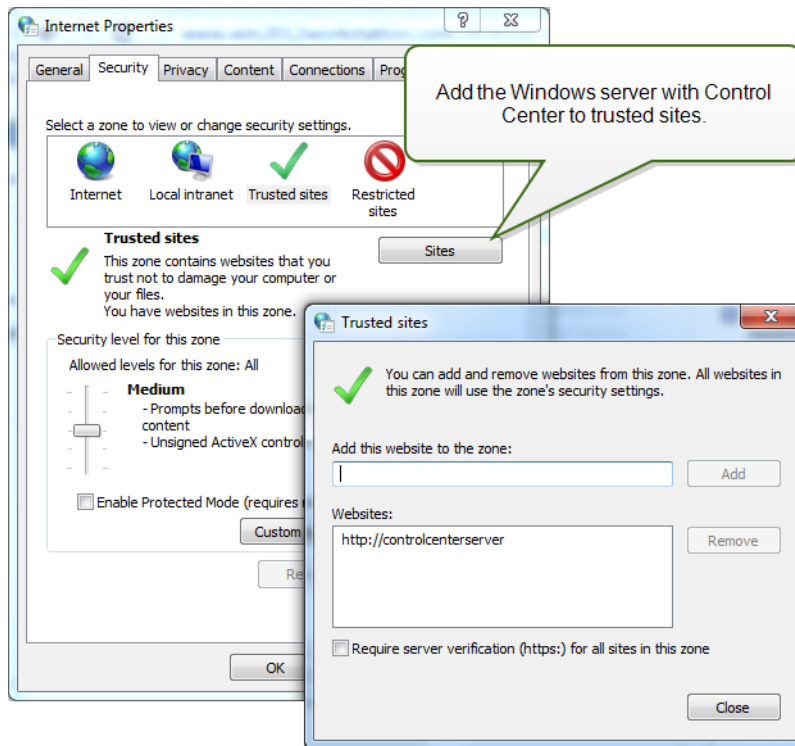
4 System Requirements

NiceLabel 2019

- CPU: Intel or compatible x86 family processor

- Memory: 2 GB or more RAM

- Hard drive: 1 GB of available disk space

- 32-bit or 64-bit Windows operating systems: Windows Server 2008 R2, Windows 7, Windows 8, Windows 8.1, Windows Server 2012, Windows Server 2012 R2, Windows 10, Windows Server 2016, Windows Server 2019 (Windows Server Core and Windows Nano Server are not supported)

- At least one printer driver installed on the computer

- Microsoft .NET Framework Version 4.5

- Display: 1366 × 768 or higher resolution monitor

- Recommended printer drivers: NiceLabel printer driver V5.1 or higher

Additional Requirements for NiceLabel Control Center and NiceLabel PowerForms Web Components

- OS: "Home" editions of Windows operating system are not supported

- Database Server: Microsoft SQL Server 2005, Microsoft SQL Server 2008, Microsoft SQL Server 2012, Microsoft SQL Server 2014, Microsoft SQL Server 2016 (Express Edition of products listed above are also supported).

- IIS 7 or later

- Recommended browsers: Internet Explorer 9+, Google Chrome (latest), Mozilla Firefox (latest)

- Enabled JavaScript in web browser

- Installed printer driver. The label preview functionality requires at least one printer driver to be installed on the Control Center server.

# 5 Windows Server Installation Prerequisites

5.1 Installing IIS Web Server

Internet Information Services (IIS) is the Microsoft Web server. It serves as a mandatory component to run NiceLabel Web Printing product. IIS is available with Windows Server operating systems, you just have to enable and configure it.

> NOTE: If you are installing Web Printing on the same server as used by the Control Center, skip the steps below. Control Center installation has already configured the prerequisites.

Do the following:

1. Log in to Windows Server using the user with local administrative permissions, such as local **Administrator** user account.

2. Start **Server Manager** from the **Start** screen.
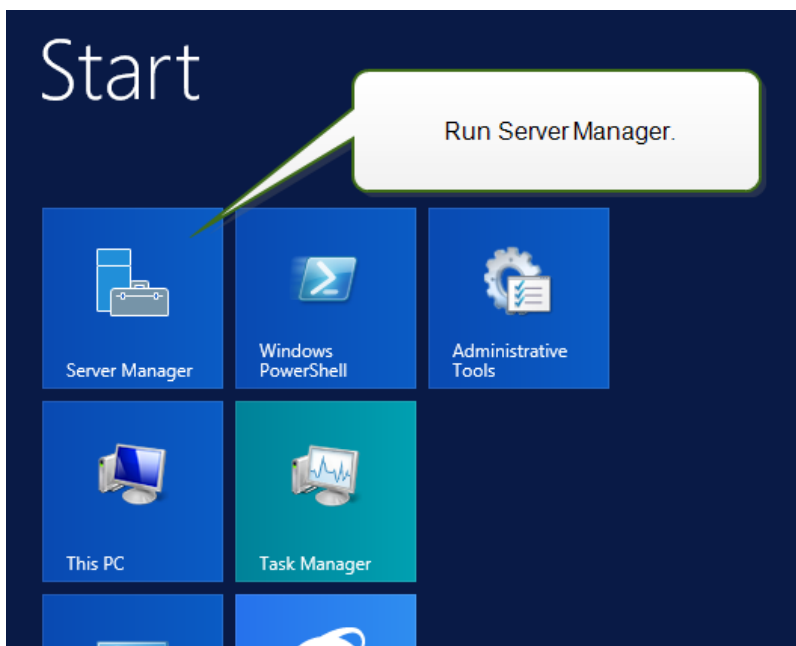
3. Click Manage, then click **Add Roles and Features**.
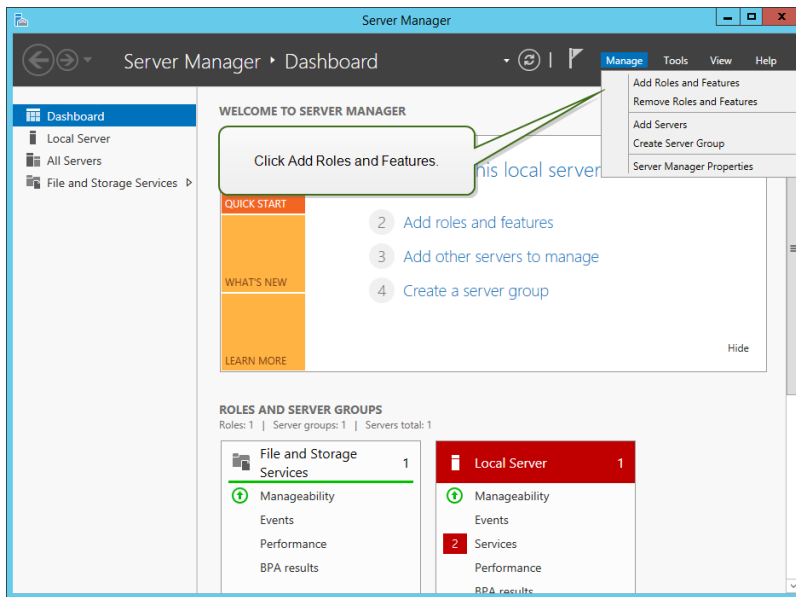
4. Select **Role-based or feature-based installation**. Click **Next**.

5. Select a local server from the server pool. Click **Next**.

6. In Server Roles step, enable the **Web Server (IIS)** option. Click **Add Features**. **Click Next**.
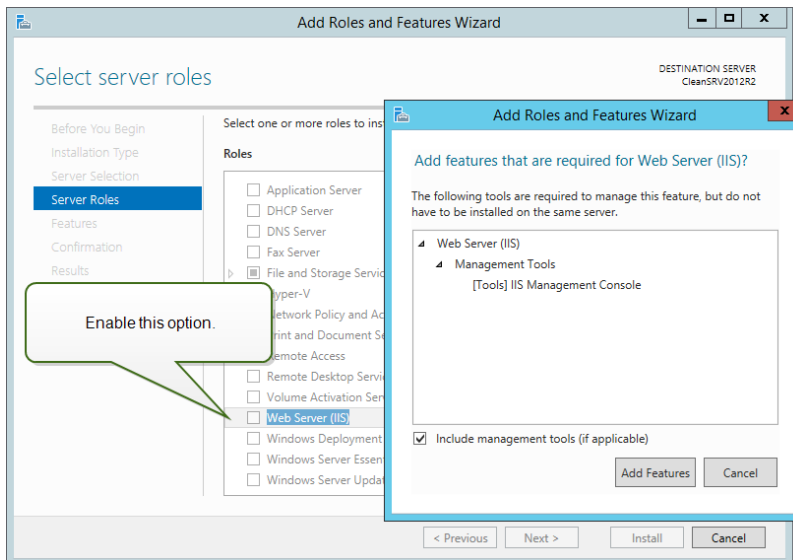
7. Select **Web Server Role (IIS) > Role Services**. Make sure the following role services are enabled. Click **Next**.

   In **Common HTTP Features**.

   - Default Document
   - Directory Browsing
   - HTTP Errors
   - Static Content

   In **Health and Diagnostics**:

   - HTTP Logging

   In **Performance**:

   - Static Content Compression

   In **Security**:

   - Request Filtering
   - Basic Authentication
   - Windows Authentication

   In **Application Development**:

   - .NET Extensibility 4.5
   - ASP.NET 4.5
   - CGI
   - ISAPI Extensions
   - ISAPI Filters

In **Management Tools**:

- IIS Management Console
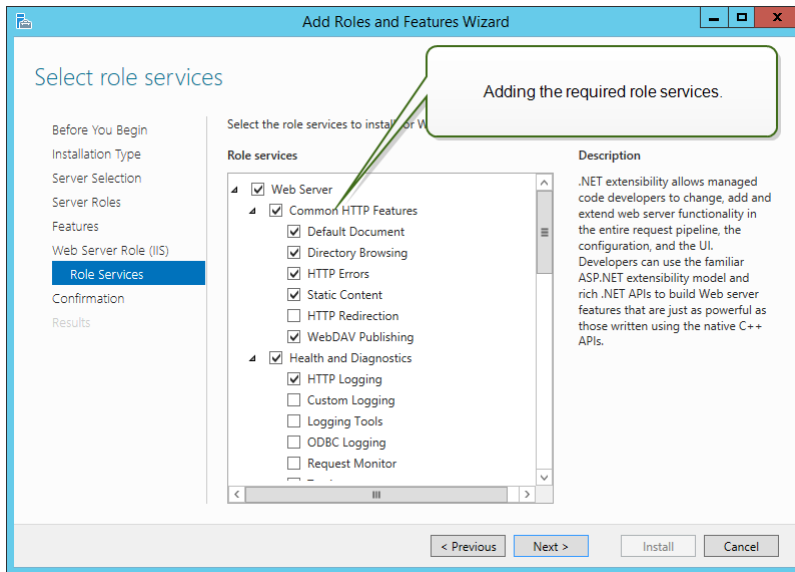
8. Click **Install**. Click **Close** when the installation completes.

If you are using Windows Server 2012 R2, you must also install the HTTP-Activation .NET feature.
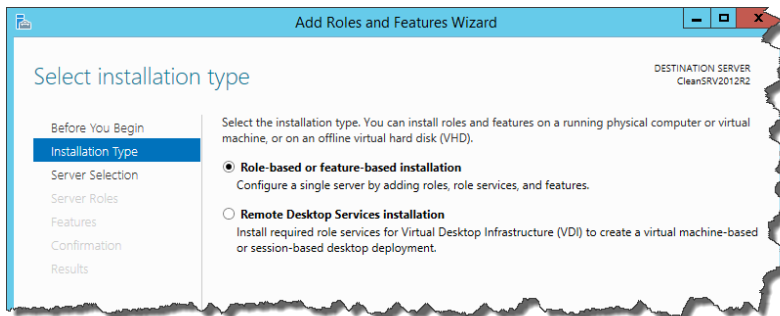
Do the following:

1. Login to Windows Server using the user with local administrative permissions, such as local **Administrator** user account.

2. Start **Server Manager** from the **Start** screen.
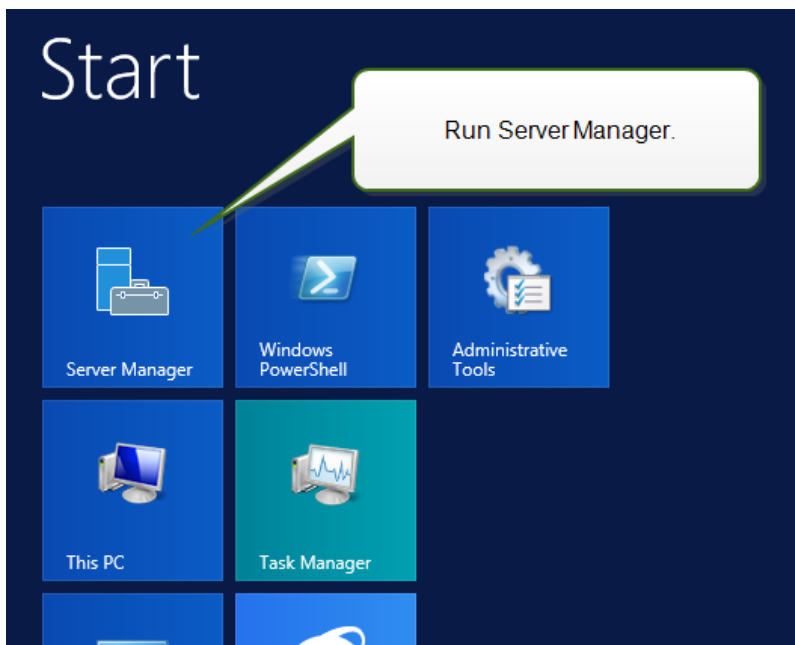
3. Click Manage, then click **Add Roles and Features**.
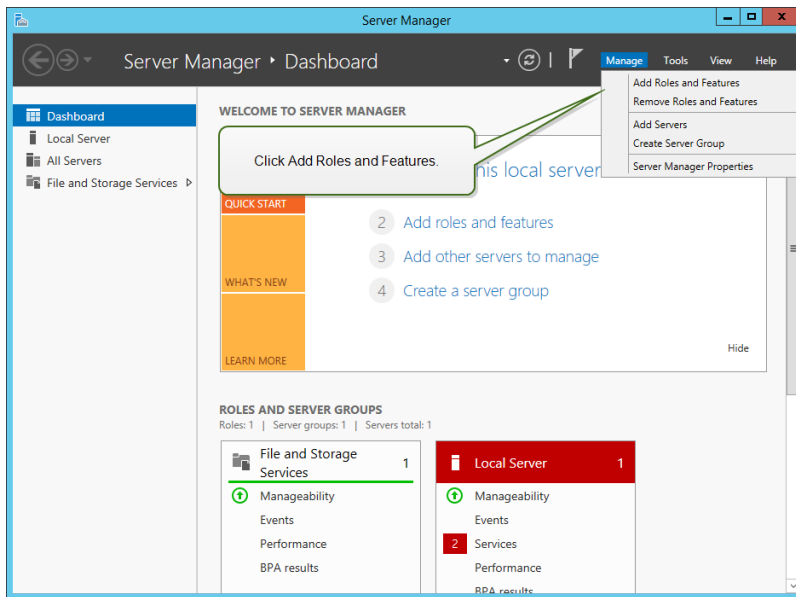
4. Select **Role-based or feature-based installation**. Click **Next**.
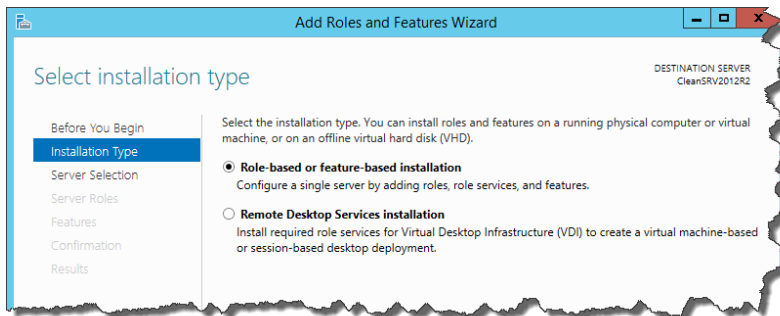
5. Select a local server from the server pool. Click **Next**.

6. Click **Features** in the selection list on the left.

7. Expand **.NET Framework 4.5 Features**.

8. Expand **WCF Services**.

9. Enable **HTTP Activation**. Click **Next**.
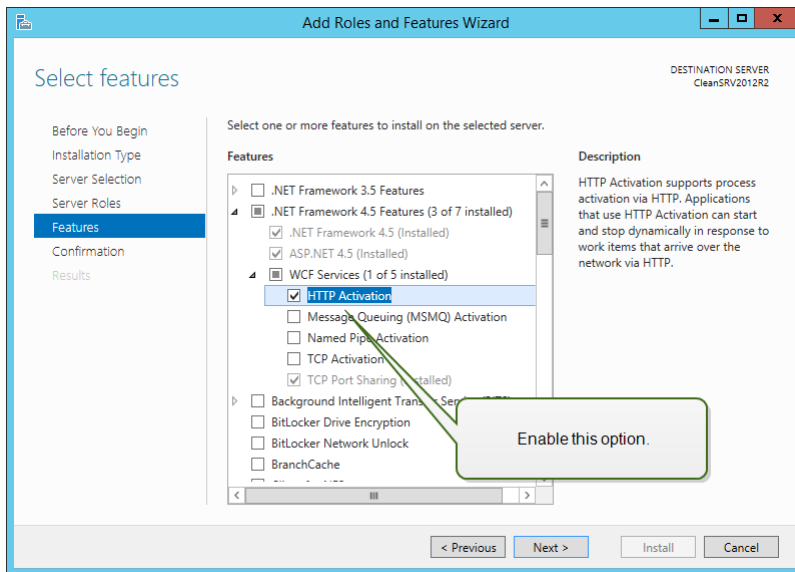
10. Click **Install**. Click **Close**.

5.2 Configuring Microsoft SQL Server

> NOTE: If you are installing Web Printing on the same server as used by the Control Center, skip the steps below. Web Printing will use the database connection parameters from Control Center.

Web Printing belongs to NiceLabel LMS product range. To activate Web Printing, NiceLabel Control Center must be installed and active.

NiceLabel Web Printing server components require a running Microsoft SQL Server to store the information about users, their solutions, licenses, web printing activities etc.

Your Microsoft SQL Server has already been set in order to install NiceLabel Control Center. NiceLabel Web Printing only requires access to the existing Microsoft SQL Server, which hosts the Control Center database (NiceAN by default). The same database is used by Control Center and by Web Printing site. Control Center accesses the database using Windows authentication whereas Web Printing site accesses the database using SQL authentication.

Before you start the NiceLabel Web Printing site installation, you need to add the SQL user with sufficient privileges to access the NiceLabel Control Center database. The Web Printing site will use this SQL user to connect to the Control Center database.

To create an SQL user with sufficient privileges in Microsoft SQL Server 2005, do the following:

> NOTE: Take similar steps if you have other supported version of Microsoft SQL Server.

1. Run **SQL Server Management Studio** to manage your SQL server. You might have installed it on the machine with SQL server installation, or any other computer that is allowed to manage the SQL server. If you're not sure where to find this application,

contact your system administrator.

2. Enter the correct server name, authentication type, login and password. If you're not sure what to use, contact your system administrator.

3. In Object Explorer, expand the **Server name**, then **Security**, then **Logins**.

4. Right-click the **Logins**, then select **New login**.
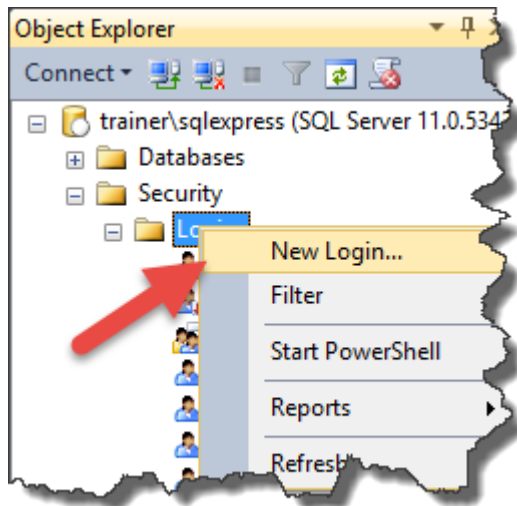
5. You are on the **General** page.

   For **Login name**, enter the current user name.
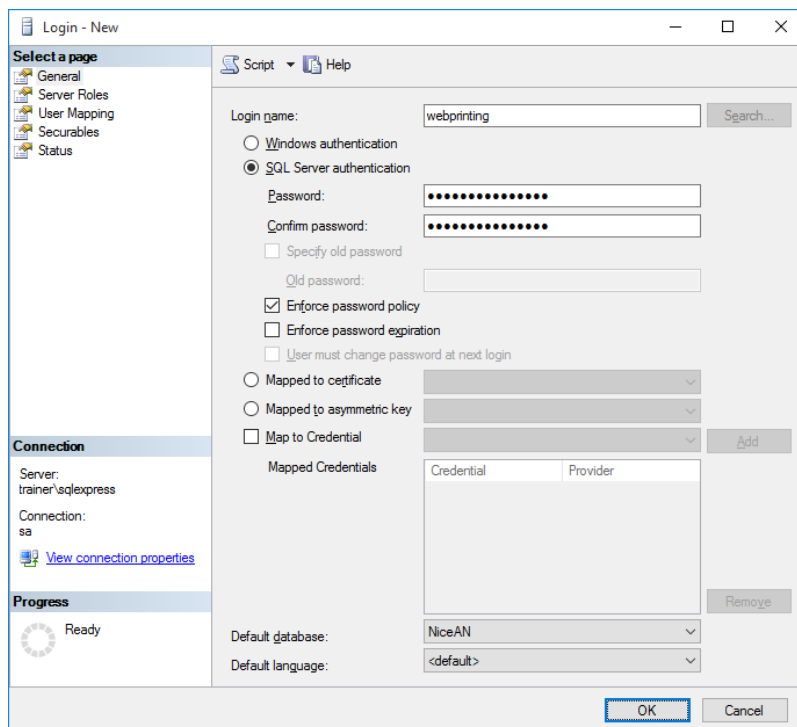
6. Select **SQL Server authentication**.

7. Enter the password for the new user.

8. Disable the **Enforce password expiration** option. The entered password will never expire.

9. Disable the **User must change password at next login** option.

10. Set **Default database** to **NiceAN** or any other – as defined during the Control Center installation.

11. Go to **Server Roles** page.

12. Make sure the **public** role is enabled.
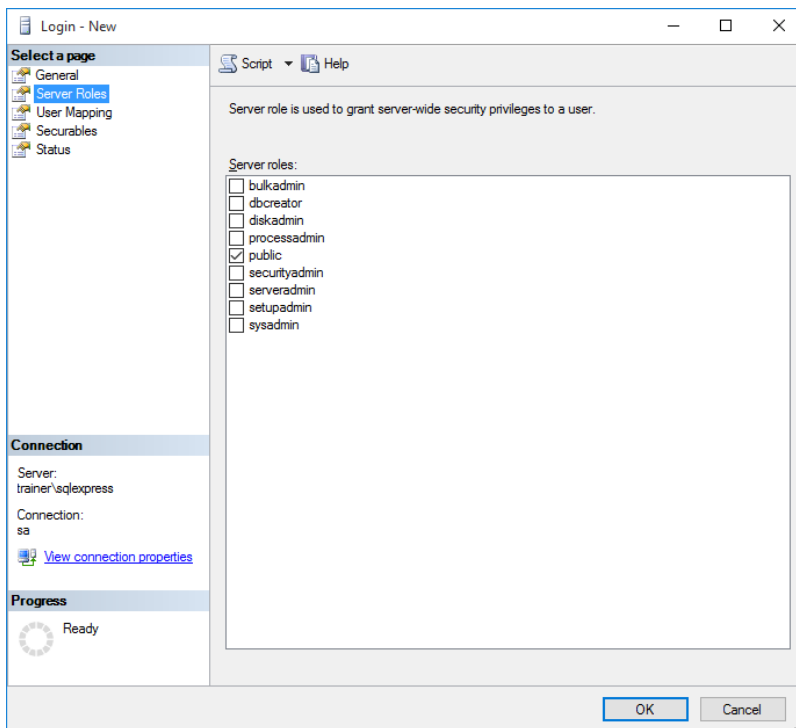
13. Go to **User Mapping** page.

14. Select the database **NiceAN** or any other – as defined during the Control Center installation.

15. For the **Database role membership for: <selected database>** enable the options **db_owner** and **public**.
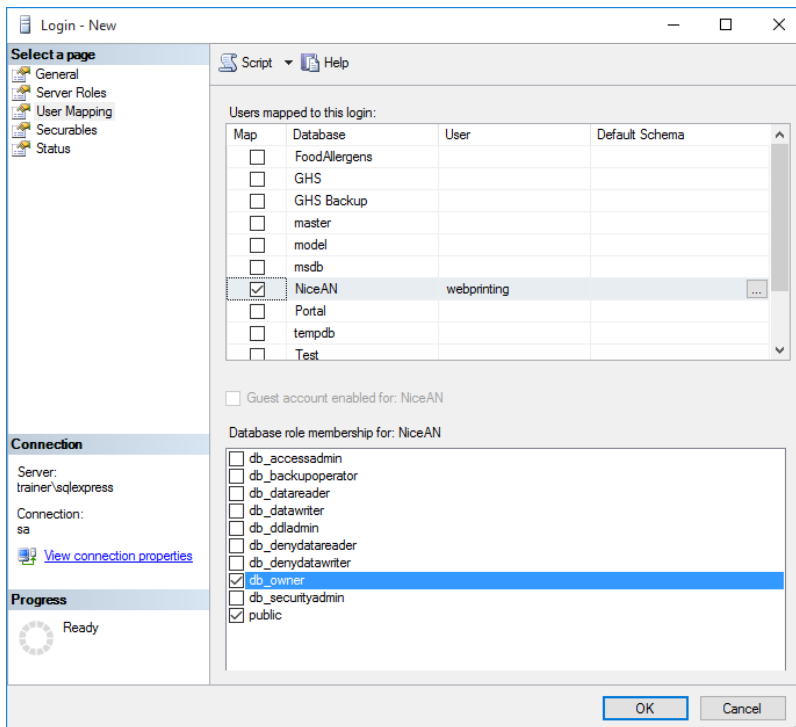
16. Click **OK**.

Then, make sure your SQL server allows both Windows domain user and SQL user login:

1. In Object Explorer, right-click the server name, then select **Properties**.

2. Select the page **Security**.

3. For Server authentication select **SQL Server and Windows Authentication Mode**. This will enable both Windows-authorized users and SQL-authorized users to connect to the SQL server.
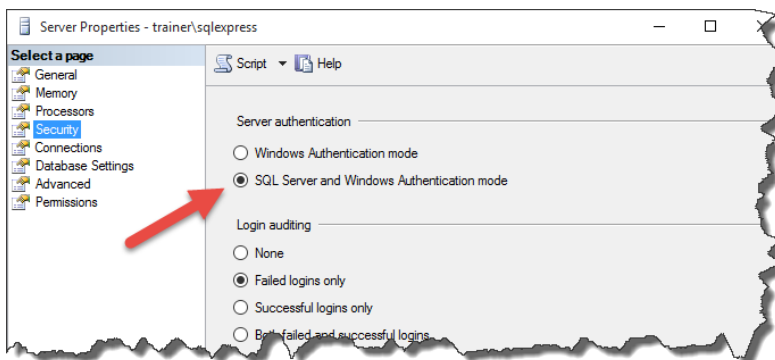
4. Click **OK**.

5. Close the **SQL Server Management Studio**.

Lastly, make sure your SQL accepts communication via TCP/IP channel.

> NOTE: This step is required only when the SQL Server and IIS are installed on two different machines.

1. Run the **SQL Server Configuration Manager** on the Windows Server machine where you have SQL Server installed.

2. Expand the option **SQL Server Network Configuration**.

3. Select **Protocols for <instance name>**.

4. In the right pane, select **TCP/IP** protocol, then right click it and select **Enable**.
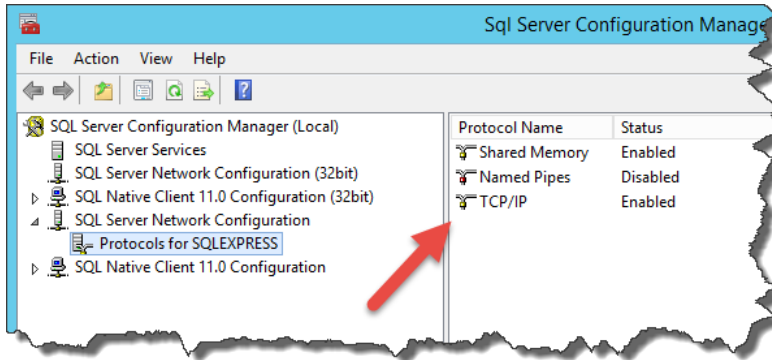
> NOTE: For more information about interaction between Microsoft SQL Server and NiceLabel, Deployment.

6 Installing the Software

6.1 Installing Server Components

6.1.1 Installing Web Printing Site

Web Printing Site is the Web application to which the Web users log in and get their assigned solution from. See section Deployment for details about the usual installation scenarios and which server should be used to host this application.

Install the Web Printing site on the same Windows computer as Control Center, or install it on any other Windows computer.

> NOTE: You must be logged on the server with administrative rights to be able to perform the software installation.

To install the Web Printing site, do the following:

1. The Web Printing site will connect to the Control Center database using the SQL user authentication. Before you begin with the installation, make sure that you know the user name and password for the SQL user with sufficient privileges for the Control Center database. You will need this info during the installation process. Configuring Microsoft SQL Server.

2. To ensure a complete installation, close all open applications before you start.

3. Download the software package or insert the NiceLabel DVD in your DVD-ROM drive. Web Printing application installation checks the installation package content.

   > NOTE: If the installation wizard does not start automatically, go to the main directory on the DVD and double-click the `NiceLabelWebPrinting2019.exe` file.
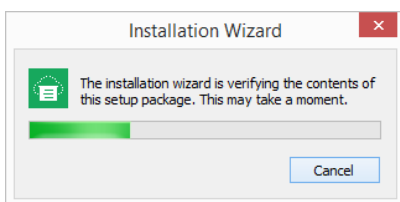
   Before the actual installation starts, the wizard verifies if the following prerequisite components are installed on the server:

   - Microsoft IIS

   - Microsoft .NET Framework 4.5

   If the .NET component is not present on your system, it will be installed automatically before the wizard continues.

4. Select installation language from the drop-down list and click **OK**.
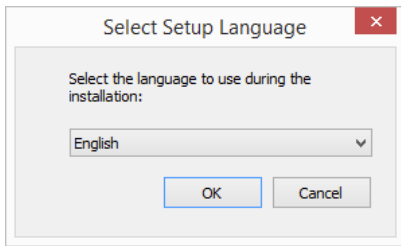
5. Follow the setup wizard prompts.

6. Define the IIS settings for the Web Printing site and define how the users will access the page:

- It can be installed as virtual directory below the default web site, and the virtual folder name can be configured. For example, the site can be accessible at `http://<server>/PowerFormsWeb`.

- It can be installed as a new web site. Be careful when providing the port number. You can only use ports that are not in use by any other service on this computer. For example, the site can be accessible as `http://<server>:81/PowerFormsWeb` if you have defined the port 81.

- You can also define the host header values, so your site responds with a friendly name. For example, if you define a friendly name 'mypowerformswebserver' and define the host header value for Web Printing site, it will also respond at the address `http://mypowerformswebserver`.

> **TIP:** See NiceLabel Knowledge Base article KB200 for more information on how to set up friendly names.

> NOTE: You can install the Web Printing site as a new site (1st level), or as a virtual directory within the selected Web site (2nd level). You cannot install it in the 3rd level.

- Activate HTTPS support if you wish to establish a secure client–server connection. This option automatically sets the port number to 443.

> NOTE: HTTPS site binding and X.509 (SSL) certificate must be manually added to the selected site in IIS manager. Details are available in this section.
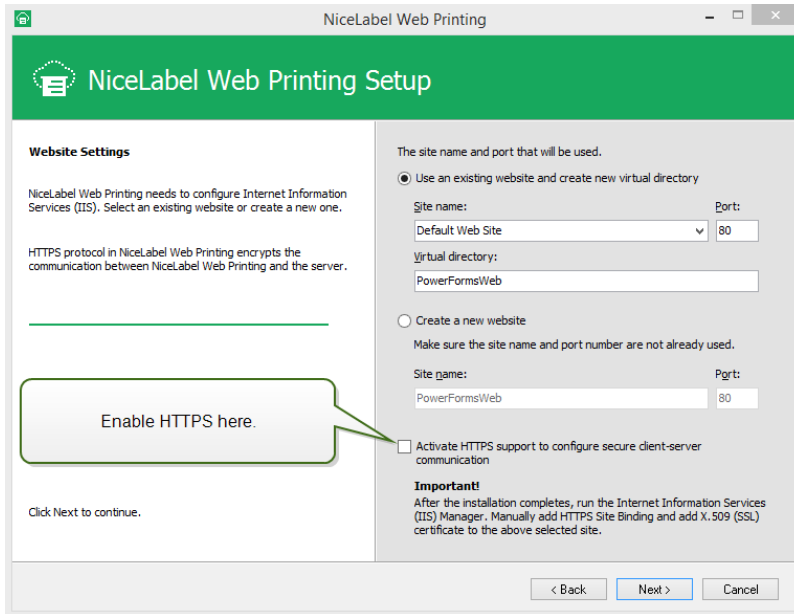
Click **Next**.

7. Select the Microsoft SQL server, where you have already installed the NiceLabel Control Center database.

> NOTE: This and the next steps will only be available, when you install Web Printing module on a different computer than Control Center.

Make sure you enter correct SQL name and instance name. If the MS SQL server is configured with a default instance, enter only the server name. If the MS SQL server is configured with instances, enter the server and instance name in server\instance syntax, for example `SERVERNAME\SQLEXPRESS`.

> WARNING: The Control Center database (NiceAN or any other) MUST already exist on the selected Microsoft SQL server.

8. Enter the user name and password to access to the Control Center database in Microsoft SQL server. Provide SQL account credentials (not Windows account credentials!). The Web Printing site will connect to the database server as SQL user.

   See "Deployment" on page 3 for more details about connectivity to the SQL server from NiceLabel software. See Configuring Microsoft SQL Server for instructions on how to set up SQL user authentication in your Microsoft SQL Server.

9. When the Web Printing site setup is completed, you can leave the **Run Web Printing** site check box selected. Click the **Finish** button and the **Login** page for Web Printing site will open in a browser.

6.1.2 Installing Web Printing Site With HTTPS/SSL Support

Typically, the Web Printing site will be accessed by an external Web printing user. The users will not connect from an internal (trusted) network, but from the Internet.

Because the data exchanged online can contain confidential information, not just user name and passwords for login, but also company-confidential information, it is vitally important to protect the data flow. Web Printing site supports SSL data encryption and it can be accessible over the HTTPS protocol.

During the Web Printing site's installation, you can define the virtual directory and virtual site where the site will respond to requests. However, just normal non-protected configuration can be set up during the installation.

To enable SSL support in Windows Server 2012 R2, do the following:

> NOTE: Take similar steps if you have other supported Windows Server operating system.

1. Create a Certificate Signing Request (CSR) and order the certificate from a certificate provider. Complete further steps after receiving the SSL certificate.

2. Open the .zip file containing your certificate. Save the file named `your_domain_name.cer` to the desktop of the web server you are securing.

3. Open the IIS manager.

4. Click the server name in IIS connections field (left side of the window).

5. Double-click **Server Certificates** in the IIS group of the central field of the window.
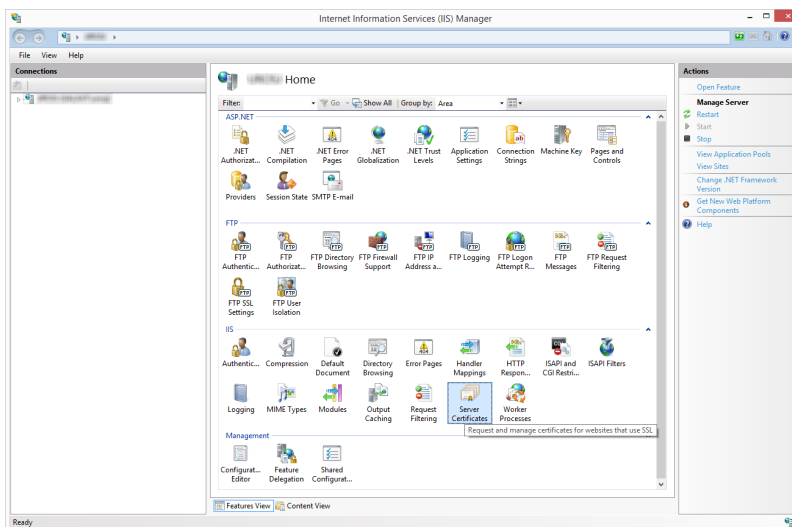
6. Click **Complete Certificate Request...** in the **Actions** field on the right side of the window.
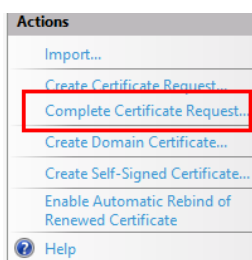
7. Browse to certificate file (.cer). Define a nter a friendly name. The friendly name is not part of the certificate itself, but is used by the server administrator to easily distinguish the certificate. Choose to place the new certificate in the Personal certificate store.
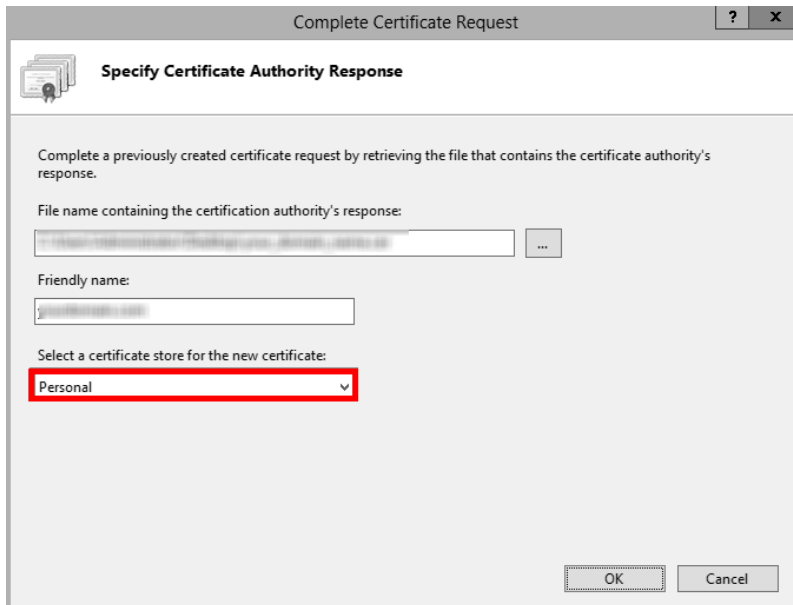
8. Click **OK** to install the certificate to the server.

9. Once the SSL Certificate has been installed on the server, assign the certificate to the appropriate website using IIS.

10. Select the name of the server to which the certificate was installed in the IIS connections field.
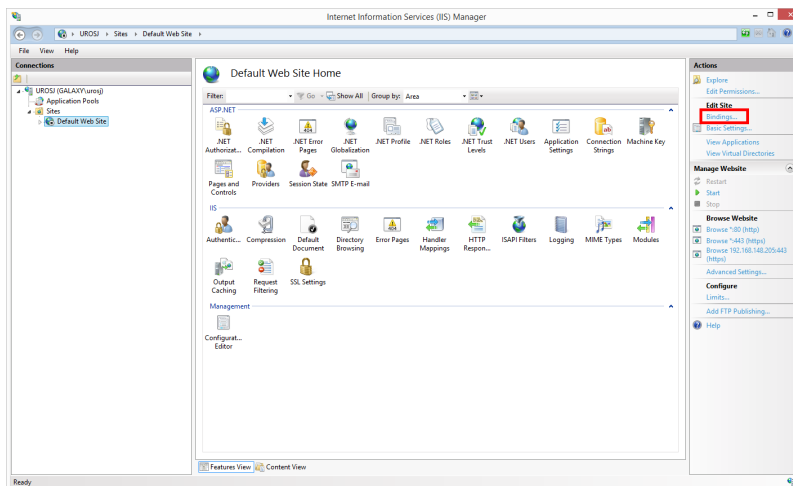
11. In the Site Bindings window click **Add...**. The **Add Site Binding** window opens.

12. Select **https** under **Type**. The IP address should be the IP address of the site or **All Unassigned**, and the port over which traffic will be secured by SSL is usually 443.
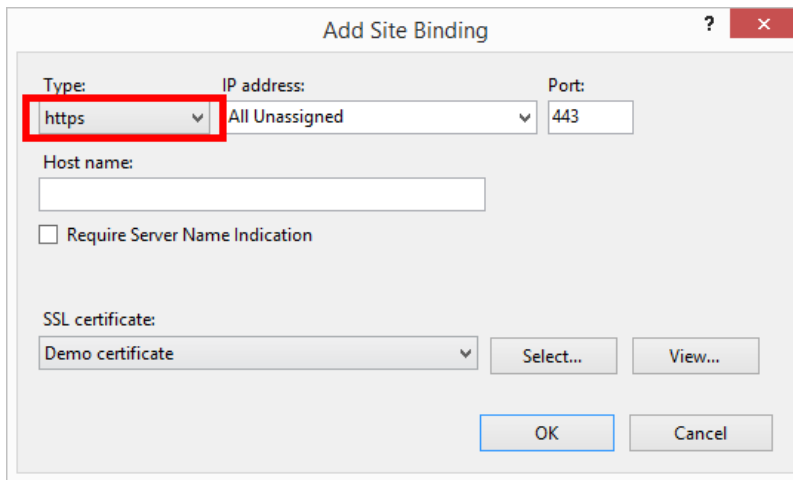
13. Click **OK**.
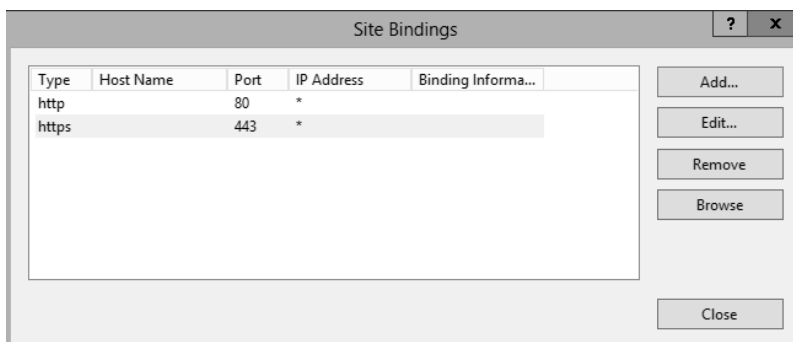
Your SSL certificate has been installed.

13. Open Windows Explorer (or any other file manager).

14. Go to the NiceLabel Web Printing site folder. By default, the folder is located at:

```
c:\Program Files\NiceLabel\NiceLabel Web Printing\Web\
```

15. Create a backup of existing file `web.config`, or rename it. You want to keep the original file just in case you want to revert to original configuration.

16. If you haven't enabled HTTPS support during the installation, then uncomment a line in the `web.config` file to enable HTTPS protocol:

```
<!--<security mode="Transport" />-->
```

6.1.3 Install Command-line Parameters

NiceLabel installer can be controlled using command-line parameters.

NOTE: Make sure to use the upper-case syntax exactly as shown. Most of the parameters are used without the leading slash, there are two exceptions: /s (for silent install) and /l (for logging).

The following command-line switches can be used, if you want to perform a silent installation. This is the installation mode, when user does not have to provide any information for the

installation and no dialog boxes are shown to the user. But you have to provide all required information through these command-line switches.

> NOTE: The switches below work only when you use the silent install switch /S.

Parameter	Description
/s	Silent install. No dialog boxes are displayed. The installer executes in the background.
/l="folder_and_file_name"	Logging the installation process in the provided file name. Make sure the user account performing the installation has the access permissions to the folder.
SELECTEDSERVER	This switch defines the SQL Server name and optional instance. `SELECTEDSERVER=ServerName\InstanceName`
DATABASENAME	This switch defines name of database for Control Center. Default name: `NiceAN`
SQLUSER/ SQLPASSWORD	These switches define the SQL user name and password to connect to Control Center database. The configured SQL user must already exist in the SQL Server and must have necessary access to the Control Center database. `SQLUSER=sa SQLPASSWORD=saPassword`

6.2 Installing NiceLabel Web Client

Before you can start working with shared web applications, install Web Printing client on your computer. Web Client installation is necessary only before using the shared web applications for the first time.
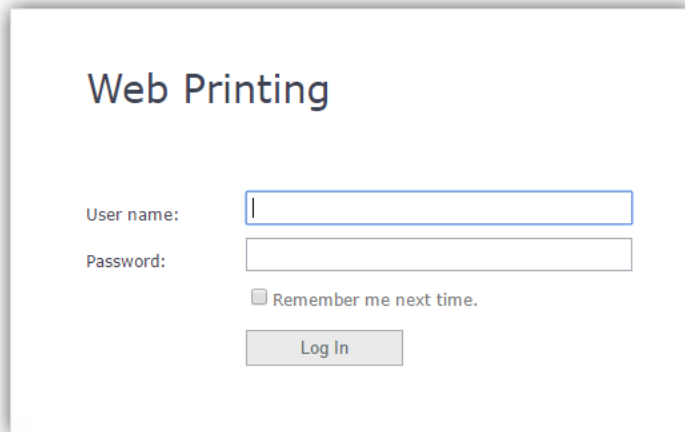
6.2.1 Installing Web Client For Logged In User (Default Option)

By default, Web Client installs on the computer for the currently logged in user. This is the most common installation method that does not require administrator privileges.

Complete these steps:

1. You receive an email with a link to the assigned web application. User name and password are provided with this email.

2. After clicking the link, the web application login web page opens. Enter **User name** and

Password.

3. You are directed to the NiceLabel Web Printing intro page. Click **Launch Printing Solution** to open the assigned solution.
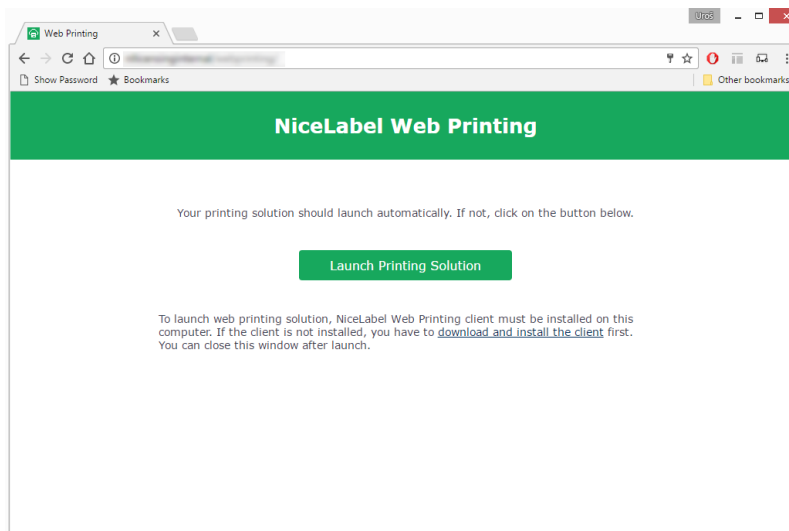
4. If the Web Client is not installed yet, click the **"download and install the client first"** link.

5. Run the downloaded installation file. Leave the browser window open.

6. Select installation language. Click **OK**.
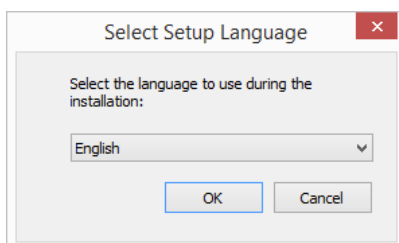
7. Welcome window for NiceLabel Web Client installer appears. Click **Next**.

8. Accept the terms of the License Agreement. Click **Next**.

9. **Start Installation** window appears. Click **Install**.
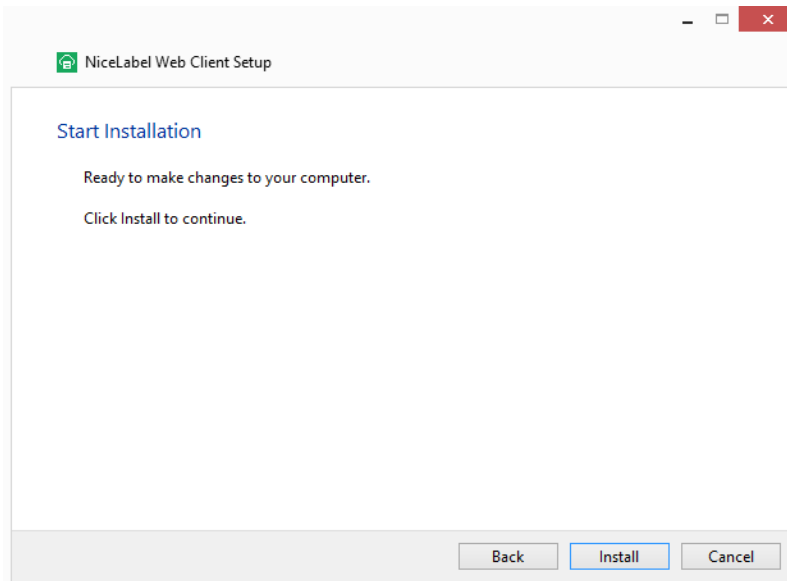
10. Click **Close** after the setup is done.

11. Return to step 3. Click **Launch Printing Solution** in your web browser. Your web application opens in a separate window.

After completing the installation, you can find the installed Web Client in `Users\AppData` folder.

6.2.2 Installing Web Client For All Users

You can also install the Web Client for all users that log on to the computer. This installation method requires administrator privileges.

> **EXAMPLE:** This installation method is useful when using Citrix servers. Installation for all users allows you to install the Web Client only once, and publish it to all users.

To install the Web Client for all users, complete these steps:

1. Complete steps 1–4 from previous section.

2. Open Command Prompt.

3. Navigate to the downloaded Web Client installation file `NiceLabelWebClientSetup.exe` on your system.

4. Run command `NiceLabelWebClientSetup.exe ALLUSERSINSTALL`.

After the installation for all users, you can find the installed Web Client in `ProgramData` folder.

6.3 Upgrading From Older Version

To upgrade NiceLabel Web Printing from any previous version, you can perform an upgrade of all components. Install new version of all components over the existing installations without any

prior removal of any component (in-place upgrade). Following these instructions will ensure that all the existing preferences, activation data and history information remain the same, and only the application files will be replaced with a new version.

The upgrade will replace the existing web.config file, re-create the site and Application Pools in IIS Manager. You will have to reconfigure these after the upgrade yourself, if you used some non-default settings.

6.3.1 Upgrading Server Components

WARNING: Make sure to upgrade the NiceLabel Control Center first, following by the Web Printing site. For more information about upgrading the NiceLabel Control Center, see **NiceLabel Control Center Installation Guide**.

To upgrade the Web Printing site, do the following:

NOTE: Before upgrading the Web Printing site see Knowledge Base article KB230.

1. Go to the Windows Server where the Web Printing Site is installed.

2. Run the installation of the new version of Web Printing site. Follow the prompts. First, the older version will be uninstalled, then the new version will install in its place. The existing configuration file will be saved to a backup location, then the new default configuration will be used instead.

WARNING: HTTPS support status (enabled or disabled) is automatically remembered after the upgrade if you perform a clean install of NiceLabel Control Center version 2019.0. If upgrading from earlier versions, set the HTTPS support manually. See the topic Installing Web Printing Site with HTTPS/SSL Support.

6.3.2 Upgrading Client Components

Do the following:

1. Go to the Windows workstation where the client design components are installed.

2. Run the installation of the NiceLabel Designer. Follow the prompts. First, the previous version will uninstall, then the new version will replace it.

NOTE: For more information, see **NiceLabel 2019 Installation Guide**.

7 Licensing

7.1 Limiting The Number Of Allowed Printers For Web Applications

Users connected to the Web Printing site who print labels using shared Web Applications must be added to a Web Application and activated in Control Center. You can define Web printing users in Control Center, but they can only login to the Web Printing site when you add them to shared Web Applications.

Each Web Application and its authorized users can use single or multiple printers. You can limit the number of printers for each Web Application. Each assigned printer takes a single license seat.

To set the number of permitted printers for a shared Web Application:

1. Open the NiceLabel Control Center at this address `http://server/EPM`.

2. Go to **Applications > Web Applications** and select an application. The Web Application configuration window opens.
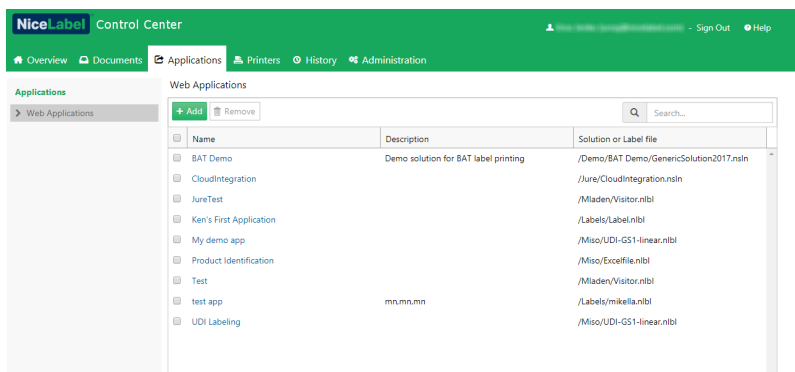
3. Go to **User Settings** and set **Enable printer limitation** to **On**.

4. Use **Number of printers** to set the maximum number of allowed printers for the selected Web Application.
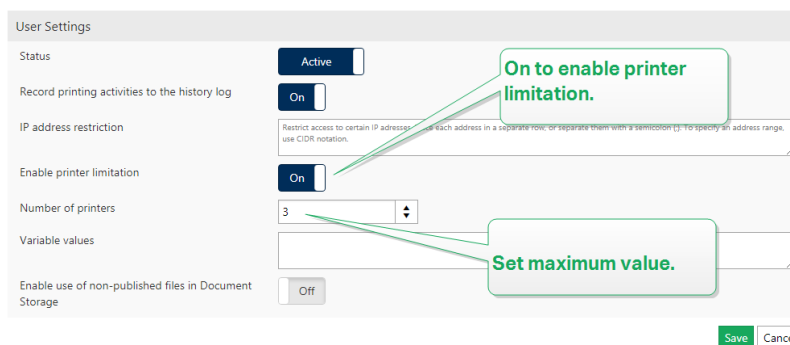
5. Click **Save**.

8 Adjusting the Software

8.1 Customization

The information in this topic relates to changes in the Web Printing site configuration file `web.config`. If you haven't yet changed the installer path, the default location for the file is set to `c:\Program Files\NiceLabel\NiceLabel Web Printing\Web\`.

8.1.1 Customizing Login Page

When the default (Forms) authentication is used, it is possible to customize the login page contents. The following attributes can be configured:

- Login page title. Default title is 'Web Printing'. To change the title, add the following application setting into the file `web.config`:

```
<appSettings>

<add key="LoginTitle" value="Custom login page title"/>

</appSettings>
```

- Width of the login page. Default width of the login page is 300 pixels. You can use the following application setting in the file `web.config` to change a default:

```
<appSettings>

<add key="LoginWidth" value="500"/>

</appSettings>
```

- Instruction text. You can add a text block with instructions for the printing user. You can configure the text itself and the height for the text by the following application settings in the file `web.config`:

```
<appSettings>

<add key="LoginInstruction" value="Instructions for the user. This
will be displayed below the title and above the login controls."/>

<add key="LoginInstructionHeight" value="40"/>

</appSettings>
```

8.1.2 Web Printing Page Customization

Customize the Web Printing page by setting a key in the file `web.config`, which sets the title of the page that is shown in the internet browser. The default title is 'Web Printing'. You can change it by adding the following setting in the file `web.config`:

```
<appSettings>

<add key="WebPrintingPageTitle" value="Custom web printing page title"/>

</appSettings>
```

8.1.3 Replacing Database Connections In Shared Web Applications

In certain cases, you want to access local databases from your shared web applications instead of retrieving the data from databases stored in your Document Management System or SQL database servers. This is a common scenario if you are testing your shared web applications, or if you plan to migrate your database servers.

Web Printing allows you replace the database connections without opening and editing the database connections in your shared labels or solutions.

The database connection string replacement logic is defined in the `DatabaseConnections.Config` file. This configuration file is not installed along with Web Printing. To enable the use of the configuration file:

1. Create an XML file using the following structure.

    ```xml
    <?xml version="1.0" encoding="UTF-8"?>

    <DatabaseConnectionReplacements>

        <Replacement>

            <From>Data Source=mySQLServer</From>

            <To>Data Source=NEW_mySQLServer</To>

        </Replacement>

    </DatabaseConnectionReplacements>
    ```

    The configuration file defines the from-to pairs using its XML structure. The `<Replacement>` element contains one `<From>` and one `<To>` element. While running the web application, the "from" string is replaced with the "to" string. You can define as many `<Replacement>` elements as necessary.

2. Save your `DatabaseConnections.Config` configuration file in the folder where the customer's Web Client is installed. By default, the location is: `C:\Users\username\AppData\Local\NiceLabel\NiceLabelWebClient`.

    -   After saving the configuration file, the Web Client always connects to the alternative database.

    > NOTE: If you installed Web Client for all users with the command-line option ALLUSERSINSTALL, save your configuration file in the following folder: `c:\Program Files\NiceLabel\NiceLabel Web Printing\Web\bin`. Details are available in section Installing Web Client for all users.

8.2 Solution Initialization

When solutions are opened at the Web Printing site, you can set the initial data for variables in the solution. You can pre-set the variables on the default form for each user independently.

The same solution can be used for different users with different initial data.

8.2.1 User-based Starting Variable Values

In some cases, form variable values need to be different from user to user. You may want to use the same solution for all of your suppliers, but want them to be able to see their individual data only. Every Web printing user defined in the Control Center includes a property named Variables, where variable values can be entered in the following syntax:

```
"VAR1" = "First name"

"VAR2" = "Last name"
```

> NOTE: If there is a space in the variable name or value, you must enclose the value in double quotes.

When a form is loaded, these values are parsed and the variables are set. In the example presented above, the variable named `VAR1` would get the value `First name`, and the variable named `VAR2` would get the value `Last name`.

When you have form objects connected to these variables, the objects are updated automatically.

8.2.2 Initializing Variable Values Through A Web Page Query String

Variable values can be added directly in a Web printing page query string. This approach allows you to adjust the Web printing site simply by providing a different URL.

Example of the URL:

```
http://<server>/PowerFormsWeb/default.aspx?Variable=Var1=%22First%20name%
22&Variable=Var2=%22Last%20name%22
```

8.3 Opening Web Client With Multiple Shared Applications

By default, each shared web application opens in a new dedicated window after you click **Launch Printing Solution** on the Web Printing login page. If you have multiple assigned web applications, the application selection window opens. This is where you select which of the assigned web applications you are going to open.

You can customize the behavior of NiceLabel Web Client to instantly load the selected shared web application using parameters in the web application URL. This can save time while opening

the shared web applications and makes sure the users you are sharing the web application with always open the correct application.

1. Open your web browser and type the standard Web Printing address into the address bar. By default, the shared web applications are accessible

   at: `https://<yourcontrolcenter>/powerformsweb` (for on-premise Control Center) or `https://<yourlabelcloud>/print` (for Label Cloud).

2. Add the parameter `nicelabelwebclient:?server=` in front of your Control Center URL.

   ```
   The URL is now:
   nicelabelwebclient:?server=
   https://yourlabelcloud.onnicelabel.com/print
   ```

3. Add the parameter `application=` after the URL. This parameter tells which assigned shared application should open right away. Separate the `application=` parameter with ampersand (`&`). "`appname`" is the name of application you want to open.

   ```
   The URL is now:
   nicelabelwebclient:?server=https://yourlabelcloud.onnicela
   bel.com/print&application=appname
   ```

4. Sign in using your credentials.

   - Your web application opens displaying the label with preset values.

   - If you have multiple assigned web applications, the application selection window opens allowing you to select and run the requested web application.

> NOTE: You can combine multiple parameters in the web application URL. See how preset variable values for your shared applications using the URL in section Opening Applications with Preset Values

> NOTE: Separate all parameters in the query string of URL with ampersands.

8.4 Opening Applications With Preset Values

Web Client also allows you to preset variable values for the labels in your web applications. This is how you make sure the users you are sharing the web application with print labels with correct values.

1. Open your web browser and type the standard Web Printing address into the address bar. By default, the shared web applications are accessible

   at: `https://<yourcontrolcenter>/powerformsweb` (for on-premise Control Center) or `https://<yourlabelcloud>/print` (for Label Cloud).

2. Add parameter `nicelabelwebclient:?server=` in front of your Control Center URL.

> The URL is now:
> `nicelabelwebclient:?server=`
> `https://yourlabelcloud.onnicelabel.com/print`

3. Add parameters for variables with values: `variable=var_name=var_value`, where `var_name` is variable name, and `var_value` is the value you want to preset for your label.

> The URL is now:
> `nicelabelwebclient:?server=https://yourlabelcloud.onnicela`
> `bel.com/print&variable=var_name=var_value`

4. Sign in using your credentials.

   - NiceLabel Web Client opens with the requested web application with a label that is populated with the preset values.

> NOTE: You can combine multiple parameters in the web application URL. See how to open a specific application using the URL in [Opening Web Client with Multiple Shared Applications](#)

> NOTE: Separate all parameters in the query string of URL with ampersands.

8.5 Solution Opening Modes

By default, each shared web application opens in a new dedicated window after clicking **Launch Printing Solution** on the Web Printing login page. You can adjust the way how printing solutions adjust to your specific working requirements. There are three solution opening modes available:

- **Opening mode 0:** default mode. This mode opens the printing solution as a separate instance of NiceLabel Web Client. Each solution opens in a new dedicated window.

  If you haven't done any mode changing so far or if the `openMode` parameter in URL is not present, this mode is active. To re-activate the **Opening mode 0**, insert `openMode=0` or `openMode=newInstance` into the web printing site address.

  > **EXAMPLE:**
  > `nicelabelwebclient2019:?server=http://<servername>/PowerFormsWeb&`
  > `openMode=0&authToken=<token content>`

- **Opening mode 1:** solution reload mode. The previously opened printing solution reloads in the same window.

  To activate this mode, insert `openMode=1` or `openMode=existingInstance` into the web printing site address.

  > **EXAMPLE:**
  > `nicelabelwebclient2019:?server=http://<servername>/PowerFormsWeb&`
  > `openMode=1&authToken=<token content>`

> **TIP:** Use the **Opening mode 1** if you want to avoid re-opening the solution in a new window.

- **Opening mode 2:** variable reload mode. Only variable values are reloaded. The solution remains unchanged – as presented in the currently opened window.

  To activate this mode, insert `openMode=2` or `openMode=reloadVariables` into the web printing site address.

  > **EXAMPLE:**
  > nicelabelwebclient2019:?server=http://<servername>/PowerFormsWeb&
  > openMode=2&authToken=<token content>

  > **TIP: Opening mode 2** resets the variable values on an opened printing solution. Use it to get the latest values if changes are expected over time.

9 Offline Mode

A majority of mission-critical services running on Web servers include key concerns of Internet access and availability. The availability includes two potential issues:

- Server availability

- Client Internet access

NiceLabel Web Printing application is running as a client named NiceLabel Web Client. Active Internet connection is necessary to run the application in online mode. Web Printing also supports offline mode, so you can run your applications even without the Internet connection. In this case, Web Printing application is installed on the local disk and runs as a standalone application.

9.1 Enabling Offline Mode

Install the NiceLabel Web Client. It serves as a reliable backup for times when Internet connection fails and prevents server access.

The offline client loads the latest version of the form, label template, and label data (if connected to a database).

If the client has no Internet access, the application opens the form and label template that were used during the last session. Database data is limited to the last database table used or last queried data batch that was displayed when the client was used with an Internet connection.

Web Printing logs all printing activities to the Control Center. When the Internet connection fails, and the user uses the offline client to print, the log of print events is not lost. The next time the user is connected to the Internet and opens the offline printing client, the past printing activity log is uploaded to the Control Center.

9.2 Changing The Offline Time Period

By default, the user can run the application in offline mode for a maximum of 24 hours.

While the user is in the offline mode, the information about printing events is still collected and all data is kept locally. When the connection to the Control Center server is re-established all logs are sent back to NiceLabel Control Center.

Information about user print events are not lost.

To change the offline time period, do the following:

1. Login to the desktop of the Windows Server where NiceLabel Web Printing is installed (Web Printing site).

2. Open the file `web.config` in a text editor.

3. Navigate to the section `<appSettings></appSettings>` and insert the following key:

```
<appSettings>

<add key="OutOfBrowserOfflinePeriod" value="1"/>

</appSettings>
```

4. Replace value **1** with your custom number of days.

> NOTE: The maximum number of days you can configure for the offline mode is **30**.

10 Authentication

Information in this chapter relates to changes in the web.config configuration file for the Web Printing site.

> NOTE: If you don't change the path in the installer, the default web.config file location is `c:\Program Files\NiceLabel\NiceLabel Web Printing\Web\`.

10.1 Token-based Authentication

When the existing Web application tries to use the print engine within Web Printing, it must first authenticate itself. Token-based authentication does not require any user data to be exposed in the URL.

The existing Web application calls for an authentication service, passing the user name and password as parameters only once. The response is a time-limited token. The token is used in the query parameter when communicating with Web Printing, so that it becomes known which solution file (.NSLN) must be used.

The Web Service `IntegrationService` supports the `GetLoginToken` method. This method accepts user name and password as the inbound parameters and provides token (GUID) as the outbound parameter.

Web Service	http://server/PowerFormsWeb/AuthenticationService/IntegrationService.asmx
Method	`public string GetLoginToken(string username, string password)`

Workflow that must be implemented at your end:

1. The calling application passes the login data (user name, password) by calling the Web Service.

2. The web service remembers the information.

3. The web service returns the token to the calling application, identifying the current session.

4. The calling application loads the solution by referring to the returned token (GUID) that is available in the URL query string:

   `http://server/PowerFormsWeb/default.aspx?logintoken=1351ED23-9C74-411C-C887-40234952A116`

   This is where you replace `server` with the name of your server, and `PowerFormsWeb` with the exact location at which you have installed Web Printing, and `1351ED23-9C74-411C-C887-40234952A116` with the token you have received from the authentication service.

5. Web Printing provides the solution file that has been assigned to the provided user

name.

6. After the successful login, the token is invalidated and cannot be used again.

10.2 Forms Authentication

Web Printing site uses native user authentication by default (Forms authentication). This authentication mode uses the user names for Web Clients as defined in the Control Center.

After opening the Web Printing site, the user is asked for his user name and password. Both are verified against the Web Printing user configuration in the Control Center. If authentication is successful, the user's solution opens.

If you want to omit the display of the Login screen, you can force a specific user using parameters in the query string in the URL. In this case, the user has already logged in some other application that has Web printing site embedded. The existing application will provide the user's username/password in the query string, as shown in the following example.

Web Printing site opens using URL, such as:

```
http://server/PowerFormsWeb/default.aspx?UserName=<username>&Password=<password>
```

Where the `<username>` is the name of the Web Client and the `<password>` is a password of the same user account as defined in Control Center. If the listed user exists, the solution defined for the user account opens.

With the default installation of Web Printing site the `<password>` is formatted as plain text. To protect the password, you can enable the Advanced Encryption Standard (AES) and encrypt the password in the query string.

To enable password encryption, do the following:

1. Open `web.config` in a text editor.

2. Navigate to the section `<appSettings></appSettings>` and insert the following two keys:

   ```
   <configuration>

   <appSettings>

   <add key="PasswordKey" value="passwordkey" />

   <add key="PasswordIV" value="passwordiv" />

   </appSettings>
   ```

3. Enter values for the fields `passwordkey` (password key) and `paswordiv` (password initialization vector). The password key length ranges from 16 to 32 characters, initialization vector length must be set to 16 characters.

4. `passwordkey` and `paswordiv` field values decrypt the encrypted password provided in

the query string. If the decrypted password matches the user name and password as defined for the Web printing user in the Control Center, the associated solution loads.

For testing purposes of encrypting and decrypting the password, you can use the application `PasswordGenerator.exe` that you can find on NiceLabel DVD in the folder `\Utility\AES Password Encrypter`.

For example, the user test uses a password `veryhardtoguess`. The URL would be formed as

```
http://<server>/PowerFormsWeb/default.aspx?UserName=test&Password=uEe6X5C
y9Xjhad2PmKlowg%3d%3d
```

> NOTE: The `passwordkey` and `passwordiv` parameters define the actual password encryption algorithm. Different combinations of these parameters result in differently encrypted passwords.

10.3 Windows Authentication

If the Web Printing site is embedded in a different Web page, user authentication has in most cases already been done in that Web application using Windows authentication. In such cases, the default behavior of the Web Printing site can be changed to inherit the previously provided authentication.

When a user accesses the Web printing site from within the enterprise (inside the domain), Windows authentication can be used. In this case, the user is automatically identified by his Windows account, and no additional login is necessary.

To change the authentication mode on your system, modify the following settings:

1. Change the `system.web/authentication` in the `web.config` file. The `web.config` file is located in the Web site root folder. This action sets the authentication to the correct mode.

   - Setting before change: `<authentication mode="Forms"/>`

   - Setting after change: `<authentication mode="Windows"/>`

2. Change the `system.web/authorization` in `web.config` file. The `web.config` file is located in the Web site root folder. This allows all users to access this site.

   - Setting before change: `<deny users="?"/>`

   - Setting after change: `<allow users="*" />`

3. Open IIS manager and navigate to `Sites/Default Web Site/PowerFormsWeb`. Open the **Configuration Editor** and complete the following steps:
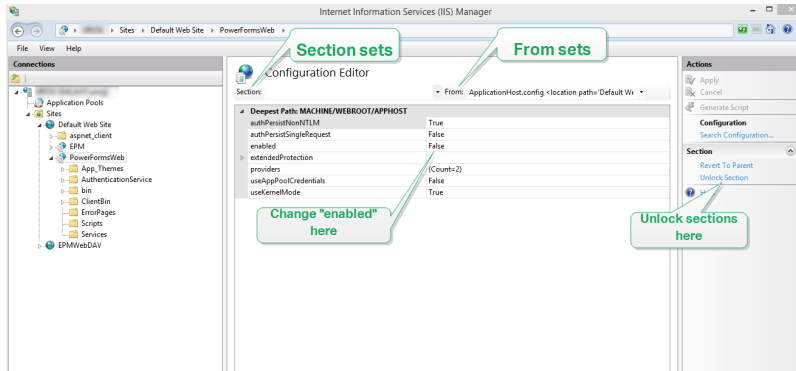
   Step 1: Select **Unlock Section** for:

   - **Section** set:
     `system.webServer/security/authentication/windowsAuthentication`.

- **From** set: `ApplicationHost.Config <location path='Default Web Site/PowerFormsWeb' />`.

Step 2: Change **Enabled** option from **False** to **True** for:

- **Section** set:

  `system.webServer/security/authentication/windowsAuthentication`.

- **From** set: `Default Web Site/PowerFormsWeb Web.Config`.

After you enable Windows authentication in Web Printing, user authentication is no longer done inside Web Printing, but within the Web server (IIS).

Furthermore, logon options can be also configured using Internet Properties for the Local Intranet Zone:
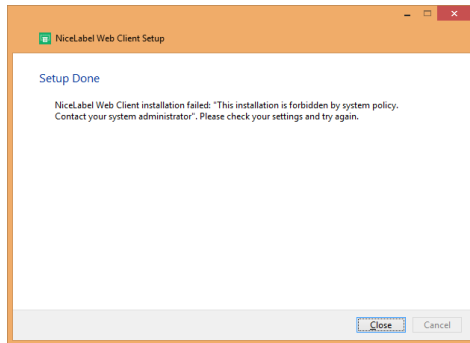
- **Automatic logon options:** Browser forwards the credentials of the currently logged-in user to the Web server. The user is logged-in automatically.

- **Prompt for user name and password:** Browser does not forward the credentials of the currently logged-in user. The user has to re-enter username and password.
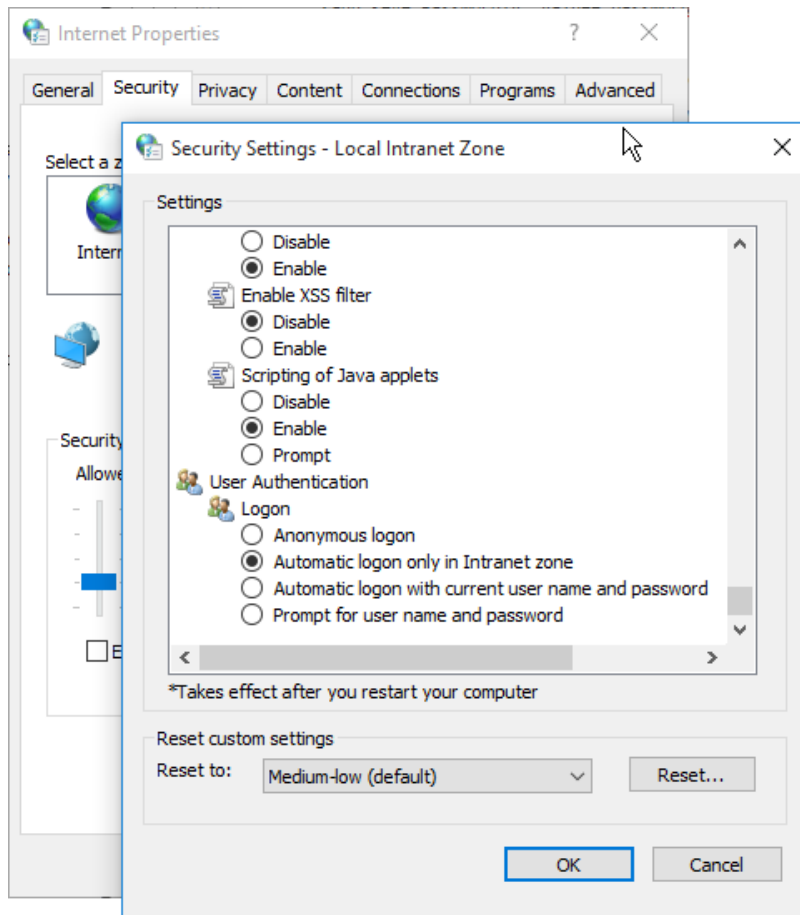
11 Troubleshooting

Issue	Solution
When downloading the Web Printing application on Win2012 R2, the below shown error message might appear.	This is a known issue on server systems. Per-user msi installations are disabled with group policy by default. See the following two pages to solve this issue: https://msdn.microsoft.com/en-us/library/windows/desktop/aa368304(v=vs.85).aspx and http://answers.microsoft.com/en-us/windows/forum/windows_xp-security/this-installation-is-forbidden-by-system-policy/ac1986be-a063-4b7b-834f-8fa56a8c0d04

12 Support

12.1 Online Support

You can find the latest builds, updates, workarounds for problems and Frequently Asked Questions (FAQ) on the NiceLabel support site.

For more information, please refer to:

- Knowledge base: https://www.nicelabel.com/support/knowledge-base

- NiceLabel Support: https://www.nicelabel.com/support/technical-support

- NiceLabel Tutorials: https://www.nicelabel.com/learning-center/tutorials

- NiceLabel Forums: https://forums.nicelabel.com/

> NOTE: If you have a Service Maintenance Agreement (SMA), please contact the premium support as specified in the agreement.

12.2 Contacting Technical Support

At some point, when you encounter a problem that you cannot solve by yourself, you may need to contact your support representative for additional assistance

https://www.nicelabel.com/support/technical-support

> NOTE: If you have a Service Maintenance Agreement (SMA), please contact the premium support as specified in the agreement.

Before contacting support it would be very helpful, if you collected information about the problem, the computer and operating system, you are running NiceLabel software on. You can use the following checklist.

	Checklist
☐	What happened? Write down exactly the error message that you get or make a screen shot of the error.
☐	When was the error discovered for the first time?
☐	What did you expect to happen?
☐	Have you discovered the problem earlier?
☐	Can the error be reproduced?
☐	How often did the error occur?
☐	Have you tried to use NiceLabel software this way earlier?

☐	If your problem is coming and going, please describe circumstances and under what conditions the error appears.
☐	Which version of NiceLabel software are you using?
☐	Which version of NiceLabel was used to design the label?
☐	Can you provide the files that you were using when the issue occurred (data files, configuration files, label files, etc.)?
☐	Which printer are you using?
☐	Which version of printer driver are you using?
☐	Which operating system are you using? In which language?
☐	Are you using firewall? Are all the required ports open?
☐	Which version of Microsoft .NET framework is installed?

Americas

+1 262 784 2456

sales.americas@nicelabel.com

EMEA

+386 4280 5000

sales@nicelabel.com

Germany

+49 6104 68 99 80

sales@nicelabel.de

China

+86 21 6249 0371

sales@nicelabel.cn

NiceLabel®

www.nicelabel.com