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Ich freue mich von Ihnen zu hören.

Bis dahin grüßt Sie

Jörn Janz

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NiceLabel PowerForms Web Installation Guide

Rev-1504

Euro Plus d.o.o.

Table of Contents

Architecture	3
Deployment	3
Overview	5
Checklists	7
Pre-installation Checklist	7
Post-installation Checklist	7
System Requirements	10
Web Printing Site	10
NiceLabel Solution Architect	10
Web Printing Clients	11
Installing Windows Server Prerequisites	12
Installing IIS Web Server	12
Configuring Microsoft SQL Server	17
Installing the Software	19
Installing Server Components	19
Installing Client Components for the Designer Role	22
Installing Client Components for the Printing Role	27
Upgrading from an Older Version	30
Licensing	31
Activating Server Components	31
Configuration of Web Printing Clients	32
Adding Web Printing Client Licenses	33
Adjusting the Software	34
Customization	34
Solution Initialization	35
Offline Mode	36
Enabling the Offline Mode	36
Changing the Offline Time Period	36
Integration into Existing Web Applications	37
Introduction	37
API Specification	38
Sample JavaScript Code	39
Authentication	39
Non-programmable Method to Exchange Data	42
Support	43
Online Self-help	43
Contacting Technical Support	43

Architecture

Deployment

Overview

Control Center is used to define the Web printing users and host their solution files. The solution file consists of printing application (designed with the application NiceForm) and labels (designed with the application NiceLabel Pro). When the Web printing user logs in to the server, the application (solution) is downloaded to his Internet browser and executed inside the browser. Technically, the solution runs inside the Microsoft Silverlight plug in that is supported in various browsers.

Typically, the Web printing user will print labels with variable data. The selected label template takes the provided data and shows the preview in the form. Labels print with the selected data. The data commonly originates from some Microsoft SQL database hosted inside the company's infrastructure, but it's not limited to Microsoft SQL. Data can reside in any other type of relational database.

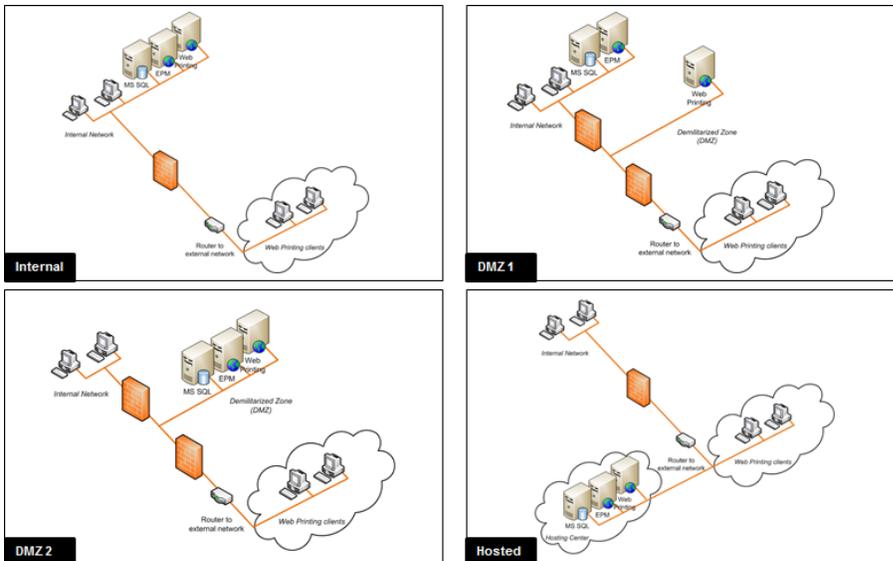
The application running in the browser doesn't communicate directly with the database. All communication is channeled through the Web Printing site. When database record is required, the applications sends request to Web Printing site, which redirects it to the database server. The response travels in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

Installation Scenarios

The server components must be installed on Windows Server. You can install design components (NiceLabel PowerForms Desktop) on server or on workstation.

Depending on the architecture of the solution as well as the hardware being used, the server components (NiceLabel Control Center, Web Printing site, and Microsoft SQL Server) can be installed all together on one machine or on separate systems. This decision depends on a number of factors, such as:

- Can you allow NiceLabel PowerForms Web software to be installed in the corporate infrastructure at all? If the company policy prevents you from any local installation, NiceLabel PowerForms Web will be hosted outside of the company network. In this case, the relevant databases (needed 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 who are connecting to the server? Can you trust these users by default (e.g. they are domain users, or company staff) or are they external users connecting to server over Internet?
- Can the existing Microsoft SQL server be used for NiceLabel PowerForms Web data or do you need to use new Microsoft SQL server?
- Do you want to allow NiceLabel PowerForms Web to connect to the company's database? If not then existing data must be offloaded into a dedicated Microsoft SQL server. You will have to make sure the databases are synchronized.
- Will NiceLabel PowerForms Web be used as stand-alone application with its own login system, or will some existing application handle login and embed NiceLabel PowerForms Web into an existing Web page?



NiceLabel PowerForms Web can be installed using different installation scenarios. Some of the possible scenarios are listed in a table below:

SCENARIO	DESCRIPTION
<p>All server components installed on the same server</p>	<p>In this case you either:</p> <ul style="list-style-type: none"> • Trust connecting users completely. The software is installed in the company's infrastructure; perhaps even on the existing Web server. The existing Microsoft SQL server can be used to host the NiceLabel PowerForms Web database. You will have to grant access to the Web Printing site for the connecting Web printing users. <ul style="list-style-type: none"> o If these are internal company staff, they might already have the access to the Web Printing site. o If these are external users connecting over the internet, you must configure your firewall/proxy to allow inbound connections. • You do not trust connecting users at all. Do not install NiceLabel PowerForms Web to the company's infrastructure. Instead, contact a server-hosting company and install all components outside your company 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.
<p>NiceLabel Control Center and Web Printing site installed on the same server, Microsoft SQL installed on a separate server</p>	<p>In this case, the Microsoft SQL server is installed on a separate server. This can 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 wish to use dedicated machines for Web processing and data processing.</p>
<p>All server components installed on separate servers, Web Printing site in DMZ</p>	<p>In this case, the installations should be distributed because of performance issues (Web server and Microsoft SQL server on separate servers). More importantly, the Web Printing site is not installed to your internal infrastructure.</p> <p>External internet users will connect to your Web Printing server and you do not feel comfortable having such server exposed to the Internet. 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, it can be set up in a DMZ (demilitarized zone). This is a physical or logical sub-network that will expose the Web Printing site to external (untrusted) users. If an attack gains access to the server, he will only have access to the equipment in the DMZ, but not the company's network.</p> <p>The 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).</p>



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 to see each other:

- NiceLabel 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)

Security Suggestions

This section deals with the recommendations on how to protect connecting users as well as the integrity of your data and infrastructure.

In most cases, the 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 be revealing company confidential information just to anybody. With security as the highest priority, the application must be reliable and trustworthy, minimizing risk of security breaches. The Web Printing site encrypts important configuration data on the disk as well as secures the communication to the application running in the browser.

However, it's not just how the NiceLabel PowerForms Web 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 will 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 and it hosts the solution files. By default, anybody can access Storage Server at `\\server@8080\DavWWWRoot`
- **Install the Web Printing site into the DMZ.** Minimize damage in case of server being compromised.
- **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) only. If somebody gains access to the Microsoft SQL Server, it will be limited to the NiceAN 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.

Overview

NiceLabel PowerForms Web is a server/client based solution primarily designed for bar code label printing. NiceLabel PowerForms Web is an add-on to NiceLabel Control Center products. You must have NiceLabel Control Center already installed and activated.

On design workstations, designers use the product NiceLabel PowerForms Desktop for label design (using application NiceLabel Pro) and form/application design (using application NiceForm). The application NiceLabel Solution Architect is then used to create the solution file; this is the application for label printing for the Web printing user.

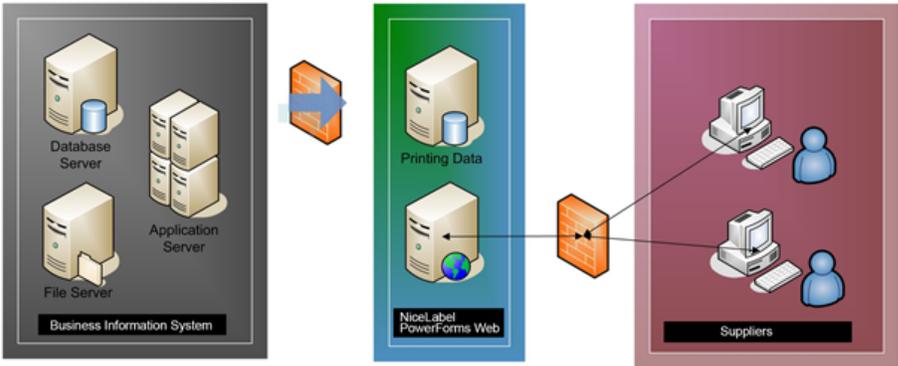
NOTE: For more information about the design and deployment cycle and more information about how to use the application see the chapter Deployment.

On the server, the NiceLabel Control Center and NiceLabel Web Printing Site are both Web applications to handle licensing for Web printing users and distribute their printing applications. All printing activities are logged in the NiceLabel Control Center database. The administrator can use a standard internet browser to control 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, and view their printing history.

The Web printing user requires an installation of printing components. But no stand-alone installation is necessary; the components are installed within the browser. The requirements are that each print client must have installed the supported Internet browser, Microsoft Silverlight and installation of the Web Printing Client Prerequisites (to reconfigure Silverlight settings and add certificate to the computer).

To summarize, the NiceLabel PowerForms Web environment consists of the following components, which are added to the existing NiceLabel Control Center product:

- Server components. NiceLabel Web Printing site.
- Design components. NiceLabel Solution Architect.
- Print client components. These are installed on each workstation that will print labels.



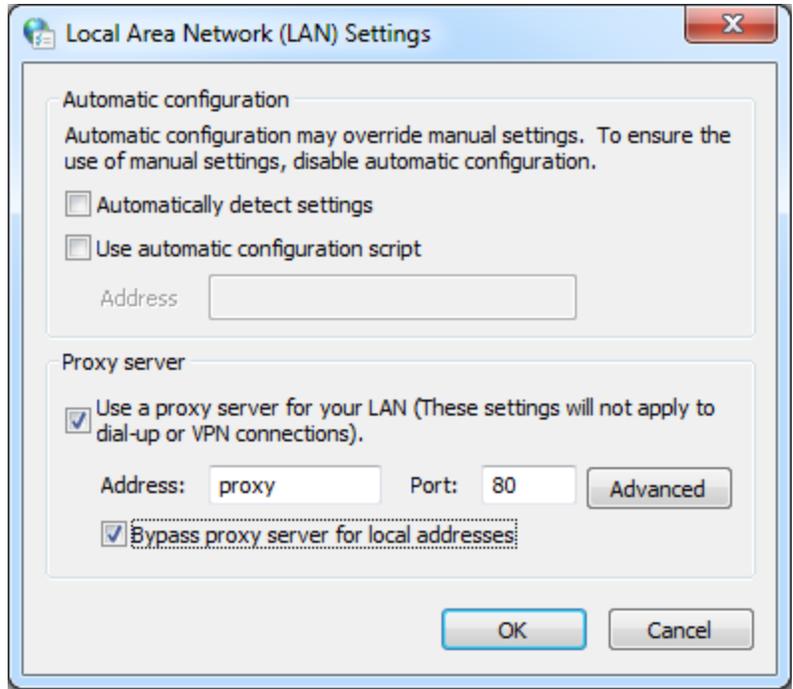
Checklists

Pre-installation Checklist

SERVER CHECKLIST	
<input type="checkbox"/>	<p>Have access to the Windows accounts with administrative privileges and SQL system administrator</p> <p>To install NiceLabel software you must have access to the user with administrative privileges:</p> <ol style="list-style-type: none">1. On the Windows Server machine with Internet Information Services role where you will install NiceLabel PowerForms Web.2. On the SQL Server, so the database NiceAN can be added to the SQL Server. The entered user must have the owner role defined on the database NiceAN. <p>See "Configuring Microsoft SQL Server" on page 17.</p>
<input type="checkbox"/>	<p>Internet access for the activation process</p> <p>You will need the internet access to activate PowerForms Web. You can activate PowerForms Web from any other computer that has internet access.</p>
<input type="checkbox"/>	<p>Meeting prerequisites for the Internet Information Services (IIS) Web server</p> <p>See "Installing IIS Web Server" on page 12 for Web Server Roles that you have to enable in the IIS.</p>

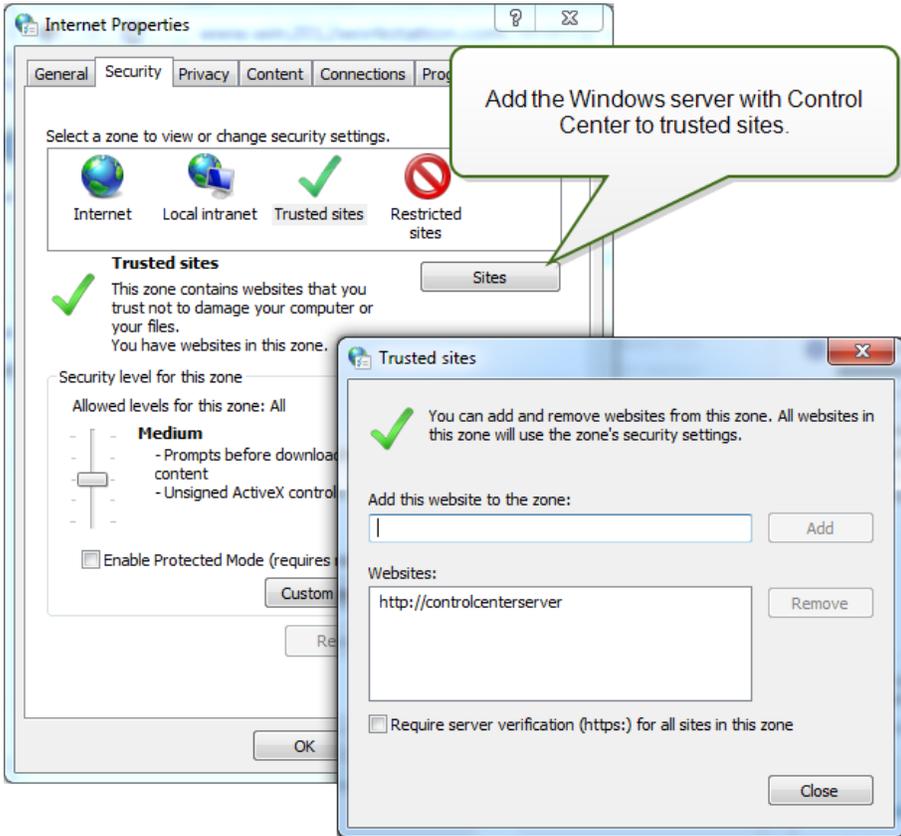
Post-installation Checklist

CLIENT CHECKLIST	
<input type="checkbox"/>	<p>Support for WebDAV to use files in the Document Storage</p> <p>Each machine that need to access data inside a Document Storage repository, must have the WebDAV support installed. Some Windows operating systems have the WebDAV support already installed, for some you have to add the support before you can access the data.</p> <div style="border: 1px solid black; background-color: #e0f0e0; padding: 5px;"><p> NOTE: The "client" is not only the application NiceLabel Pro or the application NiceForm, but any software accessing the Document Storage, including NiceLabel Automation or even Windows Explorer.</p></div> <p>See "Installing Support for WebDAV" on page 24.</p>
<input type="checkbox"/>	<p>If you use proxy server, exclude local traffic from proxy</p> <p>Bypass proxy server for local addresses, or the client might not get the license from the NiceLabel Control Center, and files in Document Storage will not be available. For more information see Knowledge Base article KB163.</p>



□ 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.



□ **Installing support for Python**

To use Python in NiceLabel client, you have to install Python into your Windows system. To install Python support, you have to install two components "Python core" and "Python for Windows extension (PyWin)".

Do the following:

1. Open **Download** page on NiceLabel Web site.
2. Download the Python support files.



NOTE: You can find the Python installation files on the DVD in the folder AddOns/Python.

3. First install Python 2.7. Follow on-screen instructions.
4. Then install PyWin32 extensions. Follow on-screen instructions.

System Requirements



NOTE: The up-to-date system requirements are also available online at:
<http://www.nicelabel.com/Products/Specifications/System-requirements>

Web Printing Site

In order for a successful installation, your hardware and software must fulfill the following system requirements:

- **CPU:** Intel or compatible x86 family processor
- **Memory:** 512 MB or more RAM
- **Hard drive:** 1 GB of available disk space
- **Operating system:** One of the 32-bit or 64-bit Windows server operating systems: Windows Server 2003, Windows Server 2003 R2, Windows Server 2008, Windows Server 2008 R2, Windows Server 2012, Windows Server 2012 R2
- Microsoft .NET Framework Version 4.0
- ASP.NET AJAX Extension
- **Web server:** IIS 6 or above

If you use IIS 7 or IIS 7.5 or IIS 8, you must install **IIS 6 Metabase Compatibility and IIS 6 Management Console** before you can install the software.

You need the following components to be installed in IIS:

- **Common HTTP features:** Default Document, Directory Browsing, HTTP Errors, Static Content
- **Health and Diagnostics:** HTTP Logging
- **Performance:** Static Content Compression
- **Security:** Request Filtering, Basic Authentication, Windows Authentication
- **Application development:** .NET Extensibility 4.5, ASP.Net 4.5, CGI, ISAPI Extensions, ISAPI Filters
- **Management tools:** IIS Management Console

You must also install the **HTTP-Activation .NET** feature. See "Installing IIS Web Server" on page 12.

- **Display:** 1024×768 or higher resolution monitor

NiceLabel Solution Architect

To be able to use NiceLabel Solution Architect and convert labels and forms into solutions, you need the following:

- **CPU:** Intel or compatible x86 family processor
- **Memory:** 512 MB or more RAM
- **Hard drive:** 1 GB of available disk space
- **Operating system:** 32-bit or 64-bit Windows operating systems: Windows XP, Windows Server 2003, Windows Server 2003 R2, Windows Vista, Windows Server 2008, Windows Server 2008 R2, Windows 7, Windows 8, Windows 8.1, Windows Server 2012, Windows Server 2012 R2
- Microsoft .NET Framework Version 4.0
- **Display:** 1024×768 or higher resolution monitor
- **Support for WebDAV:** See "Installing Support for WebDAV" on page 24.
- Label designs saved in version:
 - Recommended: NiceLabel PowerForms Desktop V6 or higher
 - Minimum: NiceLabel Pro V5.4

Web Printing Clients

To be able to print labels on the Web, you need the following:

- Operating system: One of the 32-bit or 64-bit Windows operating systems: Windows XP, Windows Server 2003, Windows Server 2003 R2, Windows Vista, Windows Server 2008, Windows Server 2008 R2, Windows 7, Windows 8, Windows 8.1, Windows Server 2012
- Internet Explorer 7 or above, Chrome 12 or above, Firefox 3.6 or above, running in 32-bit mode (If you use Internet Explorer 10 or above in Windows 8 enable the compatibility mode)
- Microsoft Silverlight (installed automatically the first time, if not already available; you need administrative privileges for the installation)
- Web Printing Client Prerequisites (installed the first time, if not already available; you need administrative privileges for the installation)

Installing Windows Server Prerequisites

Installing IIS Web Server

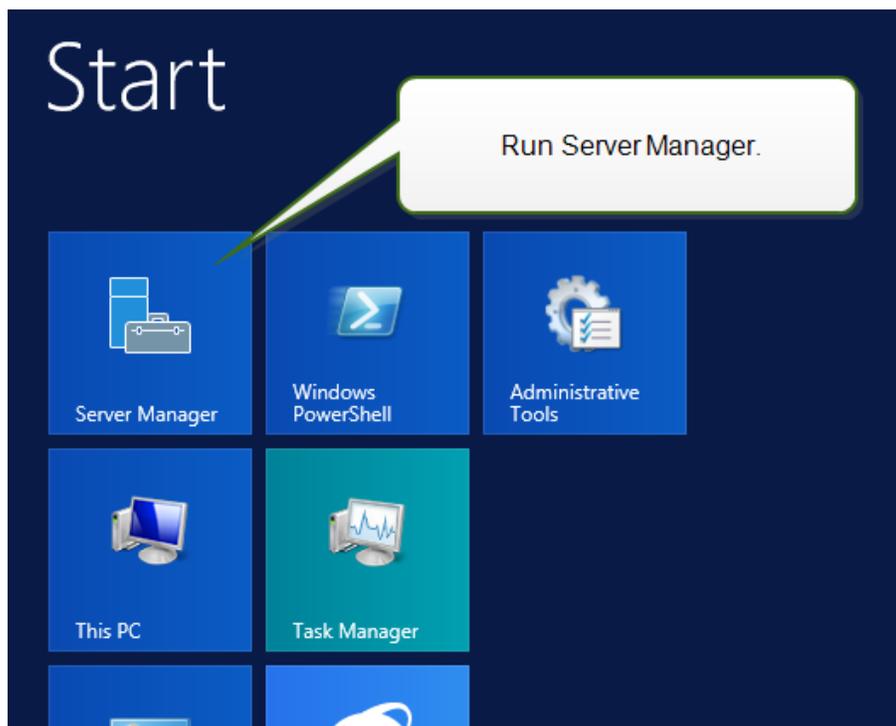
Internet Information Services (IIS) is the Microsoft Web server and is a required component to run NiceLabel PowerForms Web product. IIS is available with Windows Server operating systems, you just have to enable and configure it.



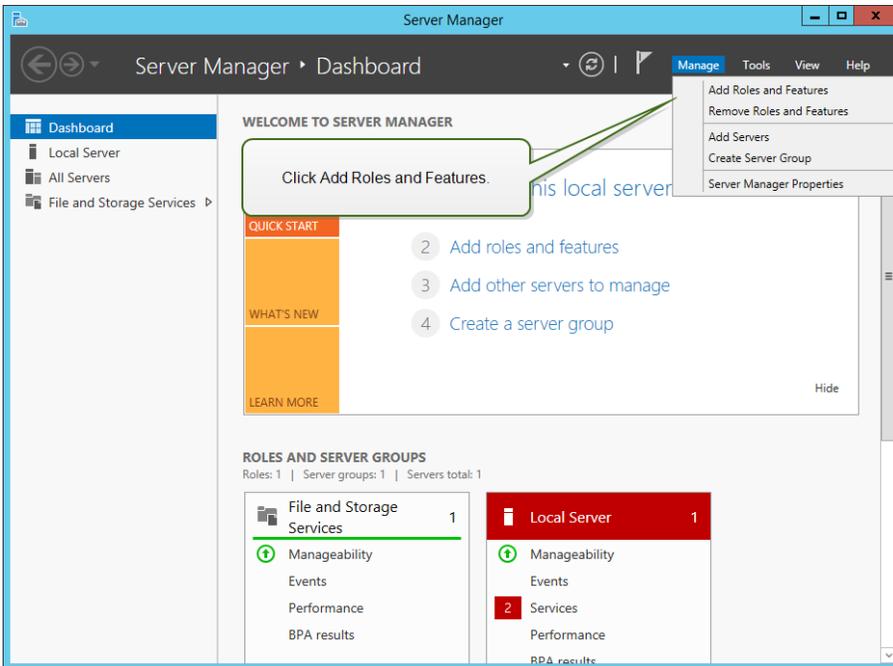
NOTE: If you will install PowerForms Web on the same server, where Control Center has been installed already, you can skip the steps below.

Do the following:

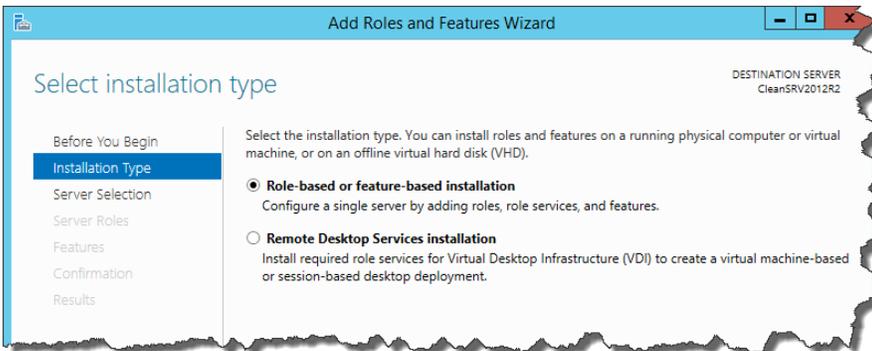
1. Login to Windows Server using the user with local administrative permissions, such as local **Administrator** user account.
2. Start **Server Manager** from the **Start** screen.



3. Click **Manage**, then click **Add Roles and Features**.

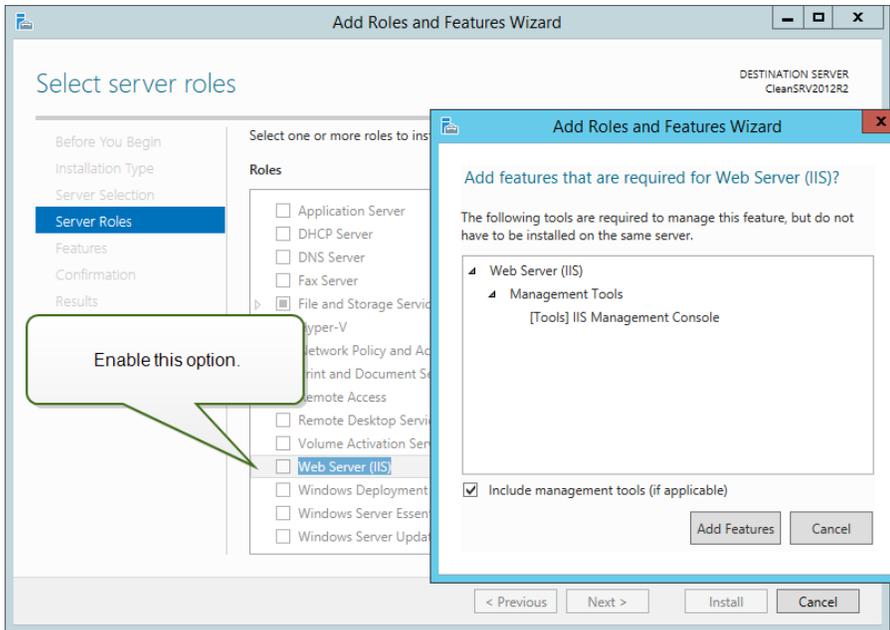


4. Select **Role-based or feature-based installation**. Click **Next**.



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

6. 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:

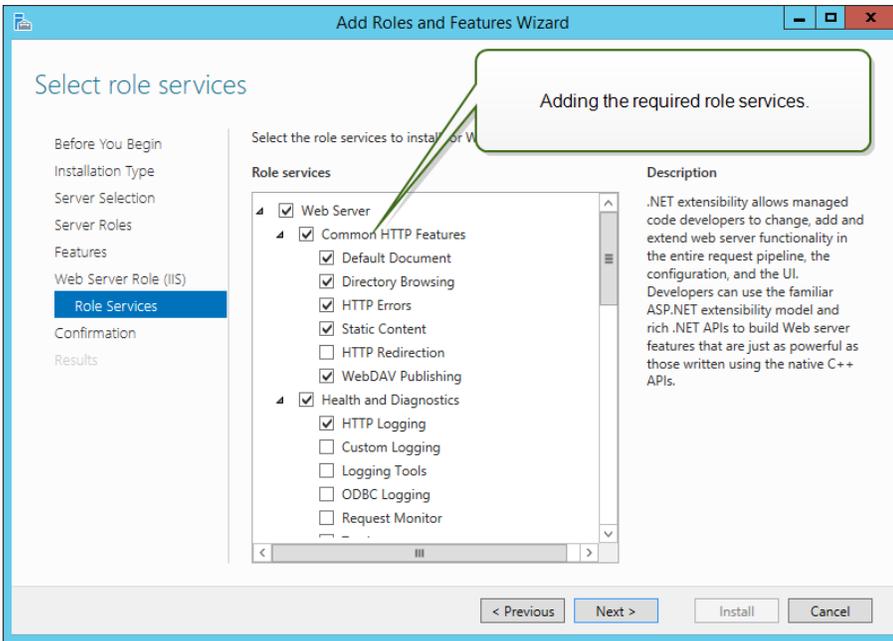
- Request Filtering
- Basic Authentication
- Windows Authentication

In Application Development:

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

In Management Tools:

- IIS Management Console

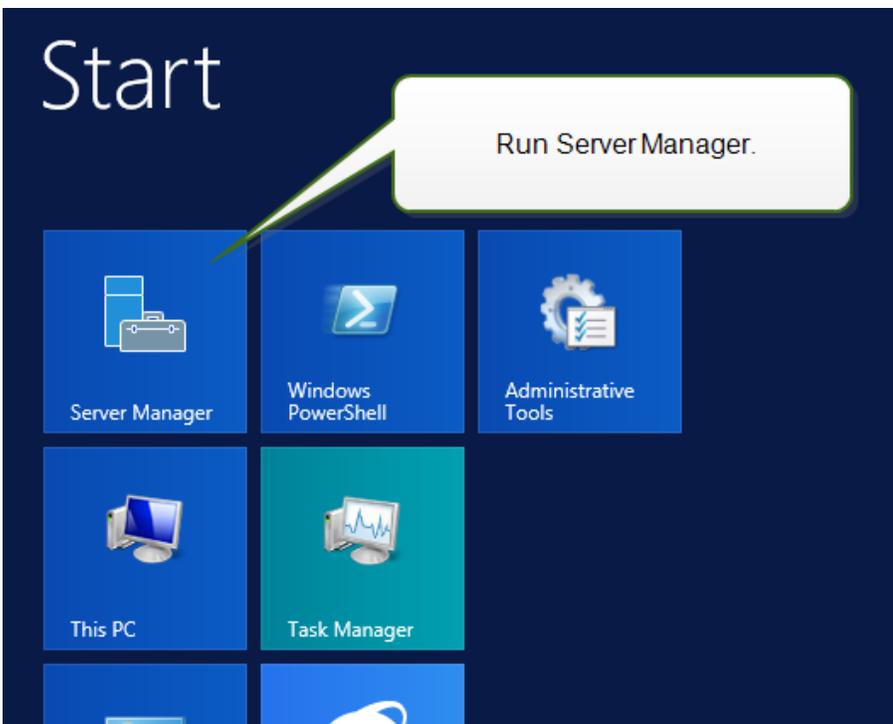


8. Click **Install**. Click **Close** when the installation completes.

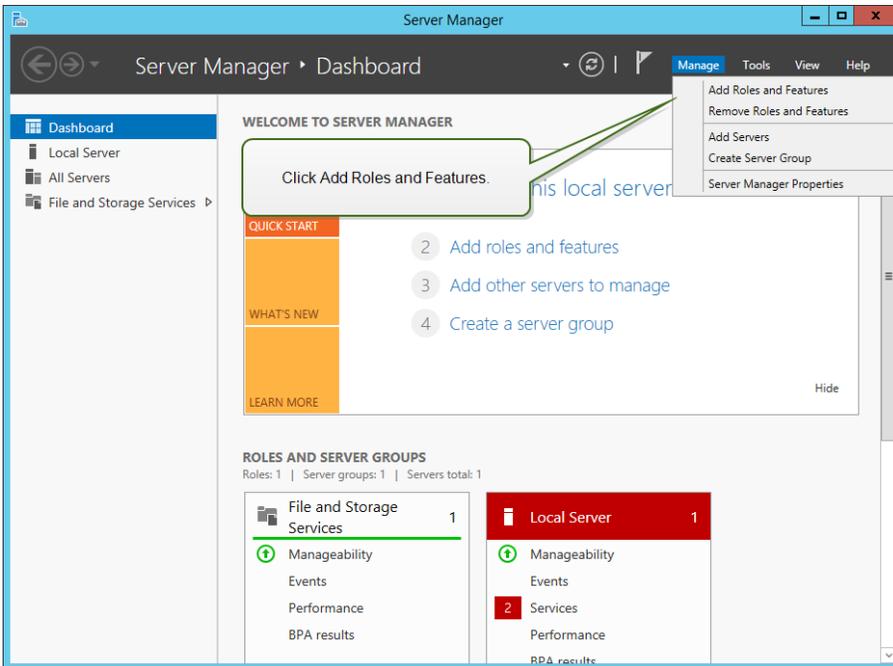
If you are using Windows Server 2012 R2, you must also install the HTTP-Activation .NET feature.

Do the following:

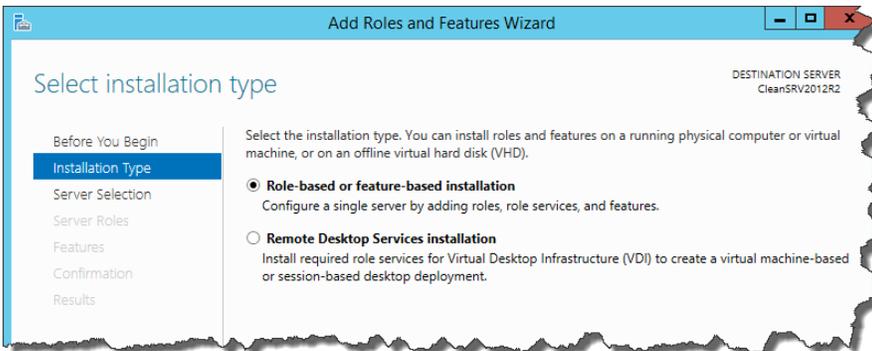
1. Login to Windows Server using the user with local administrative permissions, such as local **Administrator** user account.
2. Start **Server Manager** from the **Start** screen.



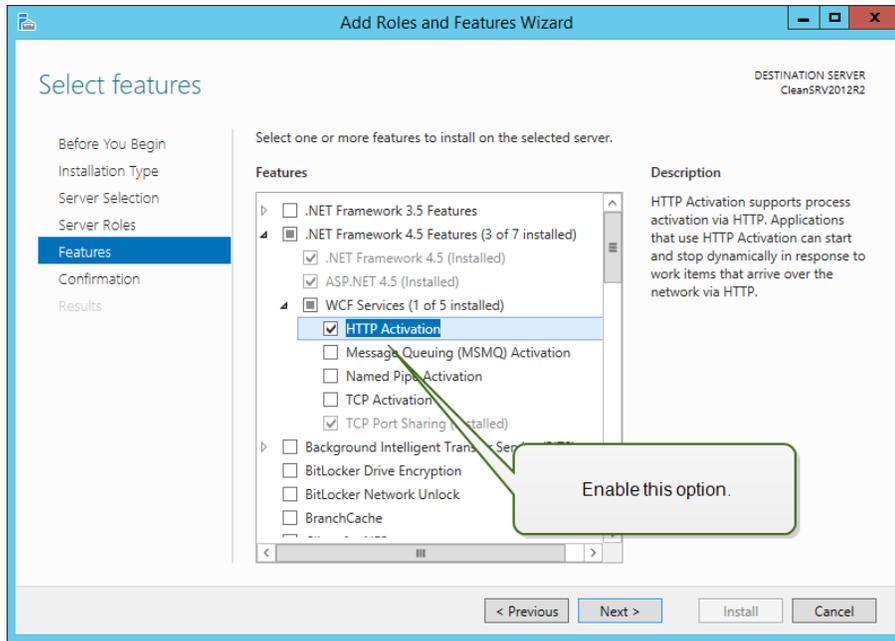
3. Click **Manage**, then click **Add Roles and Features**.



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**.

Configuring Microsoft SQL Server

NiceLabel PowerForms Web is available as add-on to NiceLabel Control Center products. You must own the Control Center to activate PowerForms Web license.



WARNING: Follow the steps in this chapter **AFTER** installing NiceLabel Control Center and **BEFORE** beginning with the installation of the Web Printing site.

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

You have already set up the Microsoft SQL Server in order to install NiceLabel Control Center. NiceLabel PowerForms Web only needs the access to the existing Microsoft SQL Server, which hosts the Control Center database NiceAN. The same database is used by Control Center and by Web Printing site. Control Center accesses the database using Windows authentication, 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 Microsoft SQL Server 2008, Microsoft SQL Server 2012 or Microsoft Server 2014.

1. Run the **SQL Server Management Studio** to manage your SQL server. You might have installed it on the SQL server, 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 in the **General**.

For login name, enter the user name for the user.

6. Select **SQL Server authentication**.
7. Enter the password for the new user.
8. Set default database to **NiceAN**.
9. Go to **Server Roles** page.
10. Make sure the **public** role is enabled.
11. Go to **User Mapping** page.
12. Enable the database **NiceAN**.
13. For the **Database role membership for: NiceAN** enable the options **db_datareader**, **db_datawriter**, **db_owner** and **public**.
14. Click **OK**.

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

1. Run the **SQL Server Management Studio**.
2. In Object Explorer, right-click the server name, then select **Properties**.
3. Select the page **Security**.
4. For Server authentication select **SQL Server and Windows Authentication Mode**.
5. Click **OK**.
6. Close the SQL Server Management Studio.

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

1. Run the **SQL Server Configuration Manager** on the Windows Server 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, See "Deployment" on page 3.

Installing the Software

Installing Server Components

Delete this text and replace it with your own content.

Installing Web Printing Site

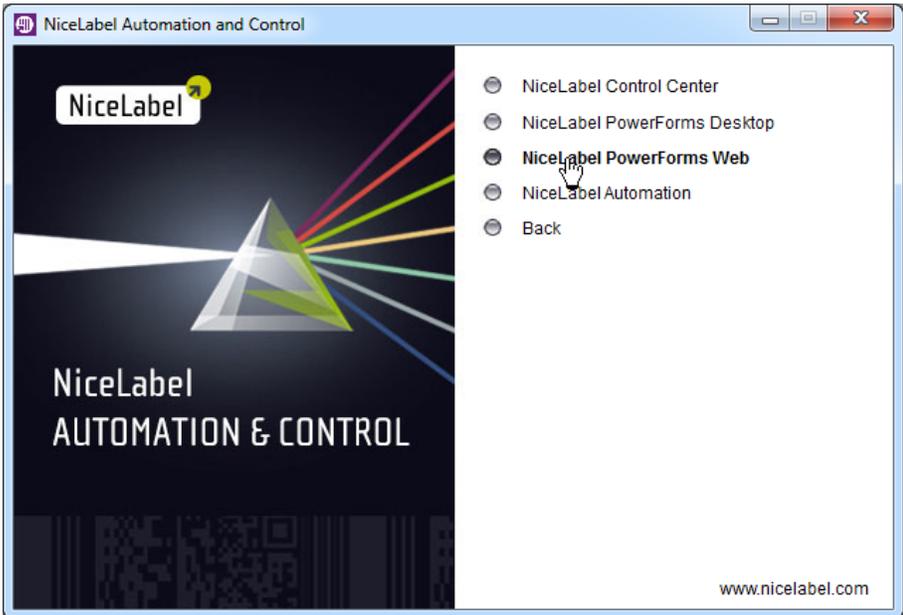
'Web Printing Site' is the Web application where Web users will login into and get their solution from. See the chapter Deployment for details about the usual installation scenarios and which server should be used to host this application. You can install the Web Printing site to the same Windows Server where you have installed NiceLabel Control Center or to some other Windows Server.

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

To install the NiceLabel Web Printing site, do the following:

1. The Web Printing site will connect to the Control Center database using SQL user authentication. Before you begin with the installation, make sure that you have information about the user name and password for the SQL user that has sufficient privileges to the Control Center database. You will need this info in the installation process. See "Configuring Microsoft SQL Server" on page 17.
2. To ensure a complete installation, close all open applications before you start installing the software.
3. Insert the NiceLabel DVD in your DVD-ROM drive. An installation window will open automatically.

NOTE: If the installation wizard does not start automatically, go to the main directory on the DVD and double-click the `START.EXE` file.



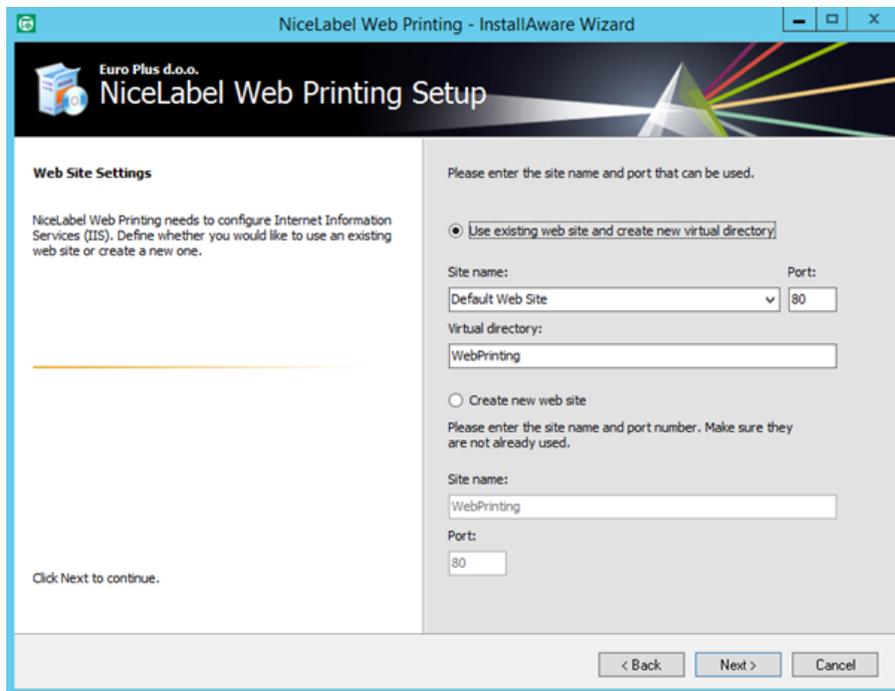
4. Click on **Install NiceLabel product**.
5. Select **NiceLabel PowerForms Web**.
6. Select **NiceLabel Web Printing Site**.
7. Before the actual installation starts, the wizard verifies if the following prerequisite components are installed on the server:
 - Microsoft IIS is installed
 - Microsoft .NET Framework 4.0

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

8. Follow the Setup Wizard prompts.
9. During the installation, 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>/WebPrinting`
 - It can be installed as a new web site. Be careful when providing the port number. You can only use ports not in use by any other service on this computer. For example, the site can be accessible as `http://<server>:81/WebPrinting`, 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 'mywebprintingserver' and define host header value for Web Printing site, it will also respond at the address `http://mywebprintingserver`.

See NiceLabel [Knowledge Base article KB200](#) for more information how to set up friendly names.

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



10. In the next step, select the Microsoft SQL server, where you have already installed the NiceLabel Control Center database. Make sure to enter the 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 MUST already exist on the selected Microsoft SQL server.

11. Enter the user name and password to access to the Control Center database in Microsoft SQL server. Provide the 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" on page 17 for instructions how to set up SQL user authentication in your Microsoft SQL Server.

12. 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.

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 the 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. The 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 the SSL support in Windows Server 2003, do the following:



NOTE: You must take similar steps if you have Microsoft Server 2008, Server 2008 R2, Server 2012 or Server 2012 R2.

1. Open the **Internet Information Services (IIS) Manager** on the server where the Web Printing site is installed.
2. Right-click the site where the Web Printing is installed, either as virtual directory, (for example in a Default Web Site), or as Virtual Web Site. Then select **Properties**.
3. Go to **Directory Security** tab.
4. In the section **Secure communications**, click the button **Server Certificate**.
5. Follow on-screen prompts to import the SSL certificate for this web server. If you have already installed the certificate, you can simply assign it to this site, import it (for example, from a .PFX file). Or you can create a request for new certificate and send it to some Certification Authority (CA), such as Verisign, Thawte, Geotrust and others. Dependent on type of Internet users logging in you can also use self-signed certificates.



NOTE: The detailed certificate acquisition process is outside of scope of this document. Contact your system administrator for details.

6. In section **Secure communications**, click the button **Edit**.
7. Enable the option **Require secure channel (SSL)** and **Require 128-bit encryption**. This will make sure that anybody connecting to the non-protected `http://` protocol of this site (if enabled at all) will be denied access. The site will only respond to `https://` requests.



NOTE: You may create a rule for all users connecting via unprotected protocol `http://` to be redirected to `https://` Contact your system administrator for details.

8. Go to the **Web site** tab and make sure the **SSL port** is enabled. The usual value for the secure port is 443.
9. Close **Internet Information Services (IIS) Manager**.
10. Open Windows Explorer (or some other file manager).
11. Go to the NiceLabel Web Printing site folder, by default it is:
`c:\Program Files\EuroPlus\NiceLabel Web Printing\Web`
12. 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.
13. Rename the file `web.https.config` into `web.config`. This file contains parameters for the IIS specifying the SSL (`https://`) connectivity.
14. You do not have to restart the Web site, IIS will automatically detect new file `web.config` and restart the site.
15. Connect to your Web Printing site using secure channel `https://`

Installing Client Components for the Designer Role

Installing NiceLabel PowerForms Desktop

NiceLabel PowerForms Web is add-on to NiceLabel Control Center product. Your label designer (the application NiceLabel Pro) and form designer (the application NiceForm) are already installed with NiceLabel Control Center product.

The clients are installed as NiceLabel PowerForms Desktop.

For installation instructions refer to the **NiceLabel Control Center user guide**.

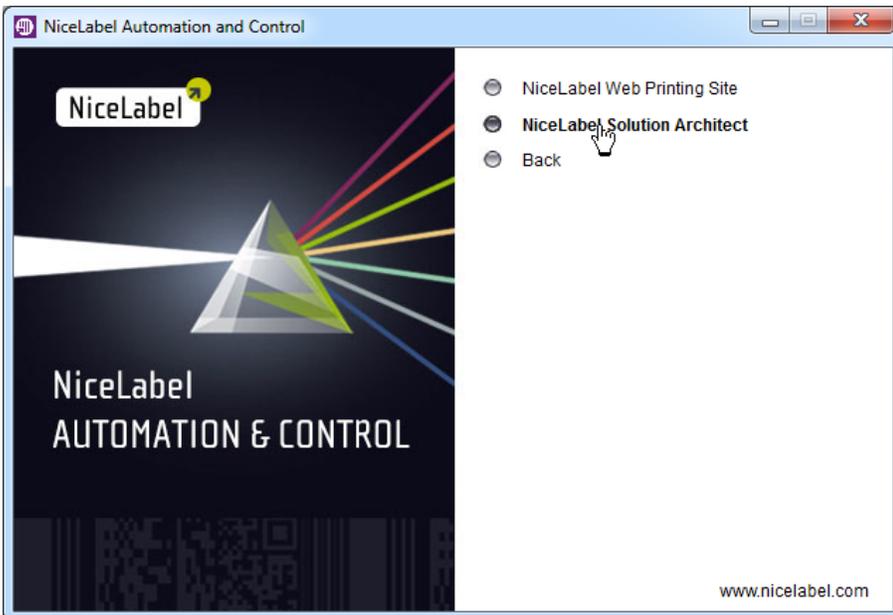
Installing NiceLabel Solution Architect

NiceLabel Solution Architect will take the labels and forms (which you have designed with NiceLabel PowerForms Desktop) as the input and prepare them for Web printing users in solution file format (.SLNZ). Install NiceLabel Solution Architect to the design workstations, not to the server.

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

To install the NiceLabel Solution Architect, do the following:

1. To ensure a complete installation, close all open applications before you start installing the software.
2. Insert the NiceLabel Control Center DVD in your DVD-ROM drive. An installation window will open automatically.
If the installation wizard does not start automatically, go to the main directory of your DVD and double-click the `START.EXE` file.
3. Click on **Install NiceLabel product**. A new window will open showing the available components.



4. Click on **NiceLabel Solution Architect** to begin the installation. Follow the wizard prompts.
5. Before the actual installation starts, the wizard verifies if the following prerequisite components are installed on the server:
 - Microsoft .NET Framework 4.0
 - Windows InstallerIf .NET Framework 4.0 or sufficient version of Windows Installer are not available, use Microsoft Update to install them.
6. Click the Install button to finish the installation.

7. The Start menu in your Windows system will show a new program group for the NiceLabel Solution Architect that contains shortcuts for the application.

Installing the Printer Drivers

You can use the labeling software to design and print labels to standard office printers, such as laser, ink jet or dot matrix, to professional output devices, such as thermal label printers or other marking devices (inscribing laser, high-speed ink jet). For any printer you have, you first have to install the appropriate printer driver before you can use it. NiceLabel software is accompanied with the printer drivers all major thermal printer brands.

The NiceLabel Printer Drivers are available on the NiceLabel DVD. You can also download them from the NiceLabel Web site.

In this case, do the following:

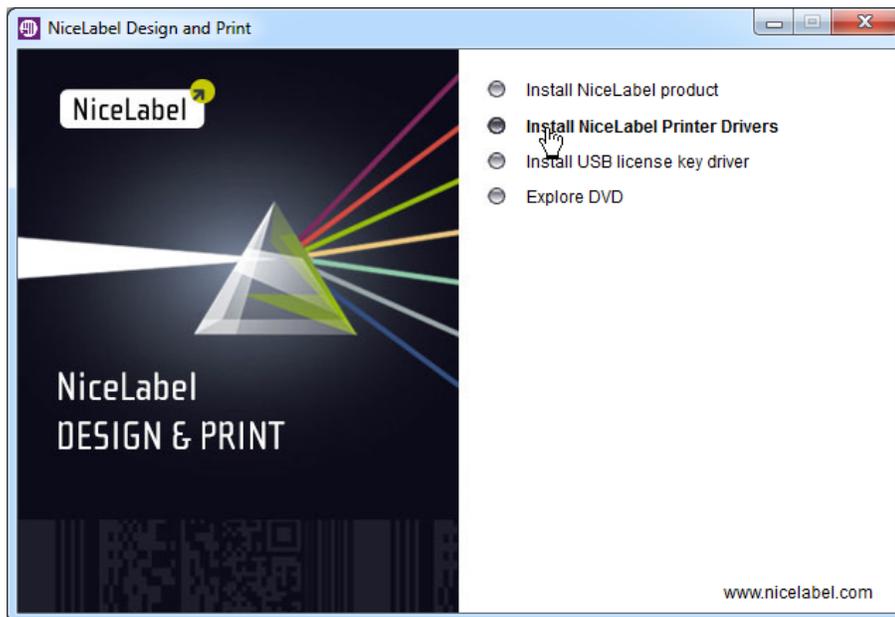
1. Open NiceLabel Web and navigate to Download -> Label Printer Drivers.
<http://www.nicelabel.com/downloads/printer-drivers>
2. Click the printer brand name, for which you need the drivers.
3. Click on the Download Now button.
4. Double-click the downloaded self-extractable .EXE file.
5. Follow on-screen prompts

Printer Driver Installation Using the Printer Installation Wizard

1. Put the NiceLabel DVD in your DVD-ROM drive. The main installation application will start automatically.

 **NOTE:** If the installation wizard does not start automatically, double-click on **START.EXE** on the DVD.

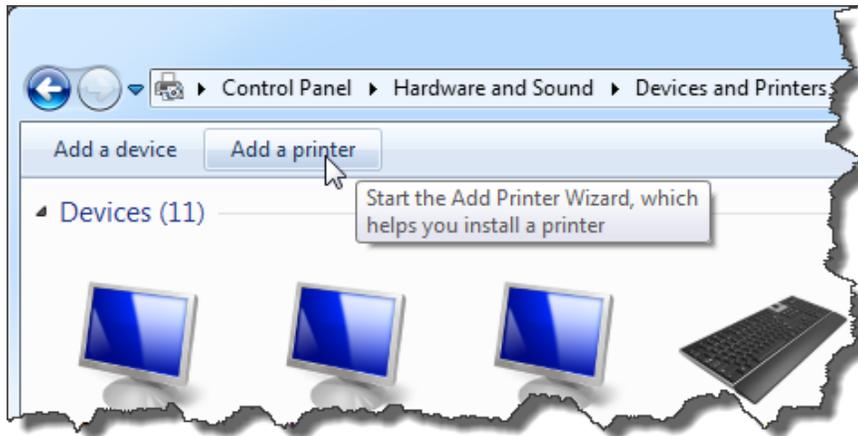
2. Click on **Install NiceLabel Printer Drivers**. The printer installation wizard will start.



3. Follow on-screen instructions.
4. Select your printer from the list. Click **Next**.
5. Select the port where you have connected your printer and click the **Finish** button.

Printer Driver Installation Using the Windows Add Printer Wizard

1. In **Control Panel**, select **View devices and printers** to open **Devices and printers**.
2. Click **Add a printer**.



3. Follow the Add Printer Wizard prompts. The actual steps vary depending on the version of your Windows operating system. Click on **Have disk** button in the step where you can select printer manufacturer and model.
4. Put the NiceLabel DVD in your DVD-ROM drive and browse to the folder **Drivers**.
5. Select the folder of your printer name. You will see the list of all available printer models of the selected manufacturer.
6. Select your model, click **Next** and finish the installation.

Controlling the Printer Installation Wizard (PRNINST.EXE) in the Command Prompt

You can automate the NiceLabel printer driver installation process hiding all dialog boxes. You can control the installer with the command-line options.

For more information see [Knowledge Base article KB253](#).

Installing Support for WebDAV

WebDAV (Web-based Distributed Authoring and Versioning) is a set of extensions to HTTP protocol. It provides a framework for users to create, change and move documents on a server; typically a web server or web share.

NiceLabel Control Center provides WebDAV access to the files inside the Document Storage. All clients that interact with the Document Storage must have enabled the WebDAV support. Usually, the "clients" are NiceLabel PowerForms Desktop and NiceLabel Automation.

- **Older Windows operating systems** (such as Windows XP and Windows Server 2003). You must install the Microsoft Data Access Internet Publishing Provider component. For more information see Knowledge Base article KB157.
- **Current Windows operating systems** (such as Windows 7 and Windows 8/8.1). The WebDAV support is already installed.
- **Windows Server operating systems** (such as Windows Server 2012 R2). You have to enable the **Desktop Experience** feature.

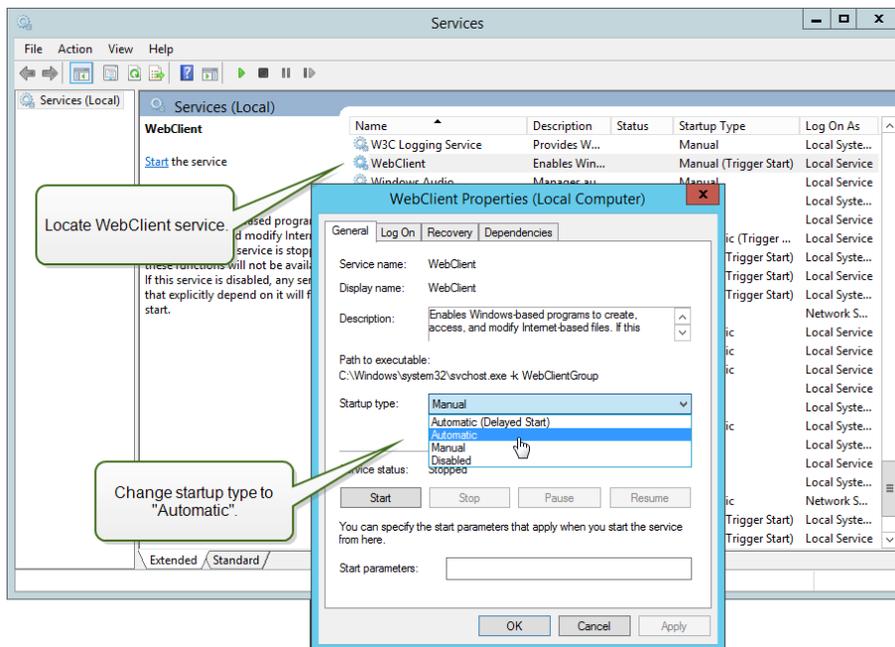
Enabling WebClient Service to "Automatic" Startup Type

Windows operating system supports access to WebDAV shares using WebClient service. When this service is stopped users will not be able to access WebDAV shares. In Windows Server 2003 WebClient service is disabled by default, where as in Windows XP, Vista, 7 and Windows 8 it is enabled in Manual startup mode. In Windows Server 2008/2012 (including R2) editions, default setup does not have web client service. You need to install Desktop experience package to add web client service.

To make sure the WebDAV support will always be available, set the WebClient service startup type to **Automatic**.

Do the following:

1. Press Windows key (or <Ctrl> + <Esc>) to open the search.
2. Type in **Services** and run the Services window.
3. Scroll down in the list and locate the service **WebClient**.
4. Double click **WebClient** to open its properties.
5. In Startup type combo box select **Automatic**.



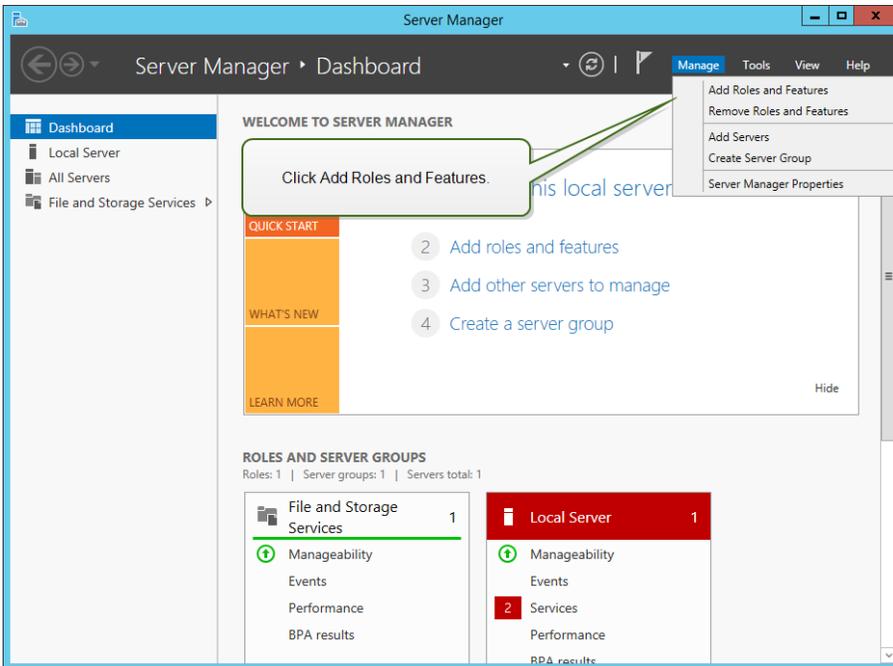
6. If the service is not running yet, click **Start** button.
7. Click **OK**.
8. Close **Services** window.

Installing Desktop Experience

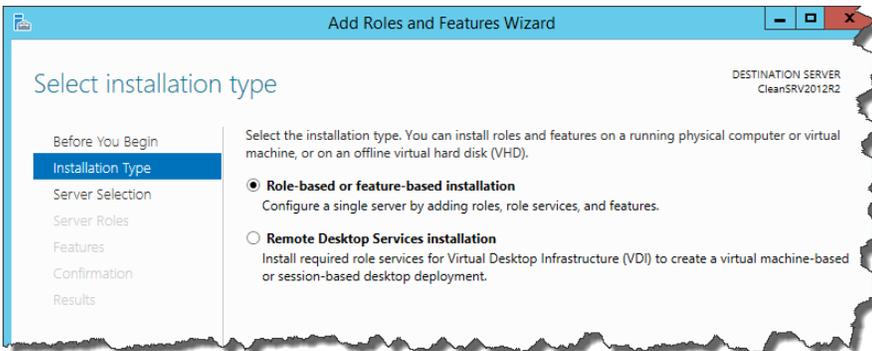
To install Desktop Experience on Windows Server operating system, do the following.

 **NOTE:** These instructions are for Windows Server 2012 R2.

1. Start **Server Manager** from the **Start** screen.
2. Click **Manage**, then click **Add Roles and Features**.



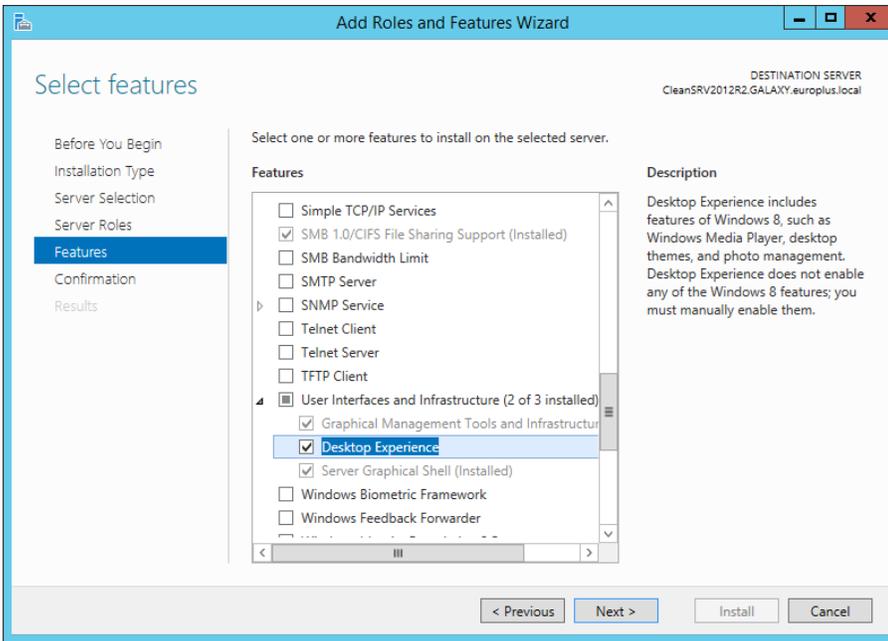
3. Select **Role-based or feature-based installation**. Click **Next**.



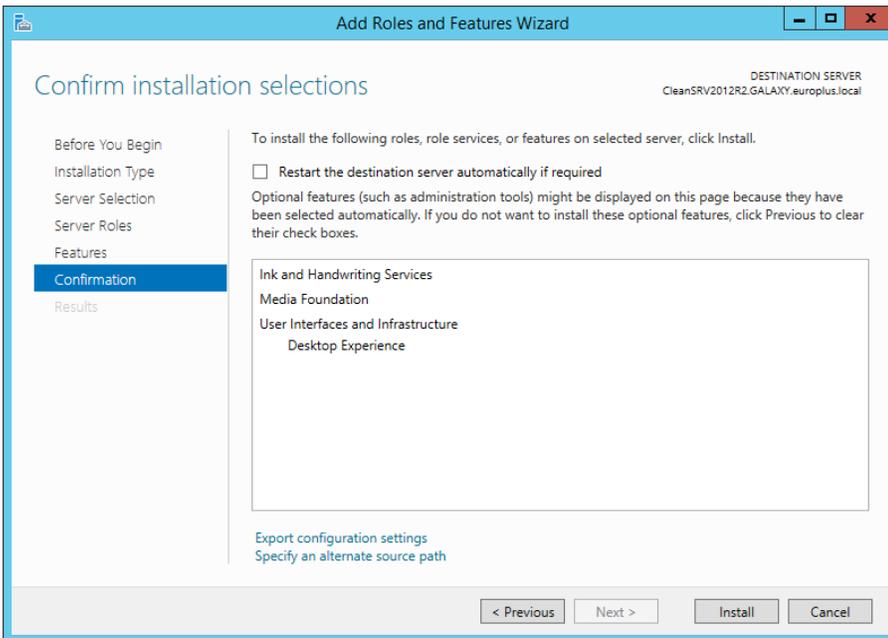
4. Select a local server from the server pool. Click **Next**.

5. The Desktop Experience feature is not a Server Role, so skip the Server Roles page by clicking **Next**.

6. In the Select Features section, expand **User Interfaces and Infrastructure** and check the **Desktop Experience** check box. Probably it will now ask you whether you also want to install the features required by Desktop Experience. Click the **Add Features** button to proceed. Now, click the **Next** button to proceed.



- In the Confirmation section, optionally check the **Restart the destination server automatically if required** check box as the Desktop Experience feature will need a restart to complete. You can also manually restart the server after the wizard completed.



- Wait while the features are being installed. You can also close the **Add Roles and Features Wizard** window if you want; it will continue in the background.

Installing Client Components for the Printing Role

Installing Client Prerequisites

Printing in NiceLabel PowerForms Web is based on Microsoft Silverlight technology running in a browser. To print labels on the Web with NiceLabel PowerForms Web, make sure to conform to the requirements. See "System Requirements" on page 10.

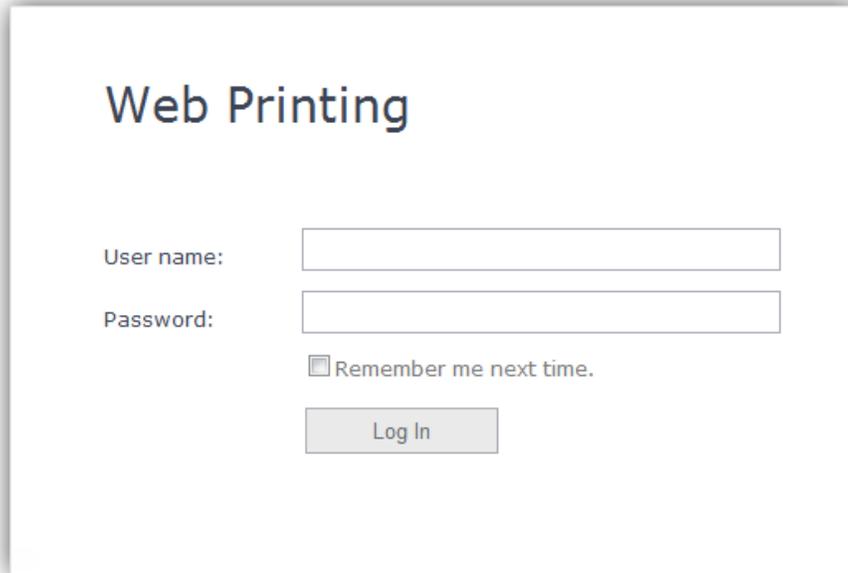
Each printing client browser must have installed two components:

1. Microsoft Silverlight and
2. Web Printing Client Prerequisites

The installation for both components is started automatically when the client visits the Web Printing site for the first time and is only required once.

To install the components on the client computer, do the following:

1. On the client computer, open the Web Printing site. You need the URL address of the Web Printing site, such as `http://<server>/WebPrinting`.
2. The login page will be displayed and might look like the following:



NOTE: You can customize the login page. See "Customization" on page 34.

3. Enter the user name and password to log in. The administrator entered this information in NiceLabel Control Center when the Web printing users and their solutions were defined. If you do not have login information, contact the administrator who set up Web printing users.
4. When you log in, the application will verify your system configuration and warn you if you do not comply with the system requirements. Follow on-screen instructions.

Checking Prerequisites

- 
Identifying operating system
 You are using fully compatible operating system.
- 
Identifying Web browser
 You are using fully compatible browser.
- 
Checking for Microsoft Silverlight
 Microsoft Silverlight is installed.
- 
Verifying permissions
 This application needs permissions to access local printers. To add Euro Plus to the list of trusted publishers and allow the application to access your printer, install [Web Printing Certificate](#) and refresh this page. You might have to contact your system administrator to grant you install permissions.

5. Microsoft Silverlight is one of the prerequisites. If you do not have it installed already, you will see a dialog box prompting you to install the Microsoft Silverlight.

 **NOTE:** You must have sufficient administrative privileges to install Silverlight. In case of any problems, contact your system administrator.

6. If you do not have an internet connection on this computer, you cannot download the Silverlight installation. Go to the computer which has an internet connection and download the Silverlight from the Microsoft web site (<http://www.microsoft.com/getsilverlight/Get-Started/Install/Default.aspx>), copy it to the client computer and install it.
7. The next prerequisite is the **Web Printing Client Prerequisites**. The application must have access to the printer drivers in order to print labels. Follow the on-screen instructions to install the Web Printing Client Prerequisites. When you install the Prerequisites, the following will happen:
- Silverlight application is granted the 'elevated permissions' so it can access printer drivers. A new DWORD `AllowElevatedTrustAppsInBrowser` with value 1 is added to the Windows registry key `HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Silverlight`.
 - The Euro Plus d.o.o. code-signing certificate is added to the list of trusted publishers in **Control Panel>Internet Options>Content tab>Certificates**. This ensures that Euro Plus d.o.o.-signed code (such as the Silverlight application provided with NiceLabel PowerForms Web) can run with the 'elevated permissions'.
8. You may have to refresh (F5) the Web page for these changes to take effect. The label-printing solution for the logged in user will display.

Using MSI to Install the Client Prerequisites

In some corporate environments the regular users do not have permissions to make any changes on their workstations. Administrator must be present to temporarily elevate the user's privileges during the installation.

To minimize the configuration time, the administrator can automatically deploy the Web Printing Client Prerequisites installation through a Group Policy. Group Policy is a set of rules which control the working environment of user accounts and computer accounts. Group Policy provides the centralized management and configuration of operating systems, application's and user+s settings in an Active Directory environment. The administrator can create a rule to force the Web Printing Client Prerequisites installation when the user logs into his computer.

You can obtain the necessary MSI package for automated installation directly from the Web Printing site. It depends on the location where you installed the Web Printing site, but the default location could be the following, if your server's name is SERVER.

`http://<server>/WebPrinting/ClientBin/ClientPrerequisites.msi`

Upgrading from an Older Version

To upgrade NiceLabel PowerForms Web 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.

Upgrading Server Components

Make sure to upgrade Control Center first, then the Web Printing site.

Do the following:

1. Go to the Windows Server where the Web Printing Site has been installed.
2. Run the installation of the Web Printing site. Follow the prompts. First, the previous version will uninstall, then the new version will install in its place. The existing configuration file will be saved to a backup, then the new default configuration will be used in its place.



NOTE: Before upgrading the Web Printing site see [Knowledge Base article KB230](#).

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 PowerForms Desktop. Follow the prompts. First, the previous version will uninstall, then the new version will install in its place.
3. Run the installation of the NiceLabel Solution Architect. Follow the prompts. First, the previous version will uninstall, then the new version will install in its place.

Licensing

Before you can start using NiceLabel PowerForms Web you must activate the software on the Control Center server. Before you start the activation process, become familiar with the following terminology:

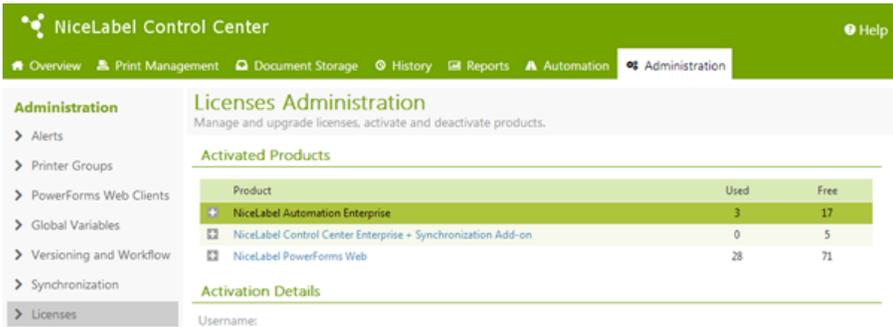
1. **Key number.** The sequence of 25 characters provided with the NiceLabel software.
2. **Registration number.** Unique number generated during the activation process. The registration number validates the entered software key.
3. **Activation code.** Issued on the Activation Web site. The activation code activates the NiceLabel software on your computer.

Activating Server Components

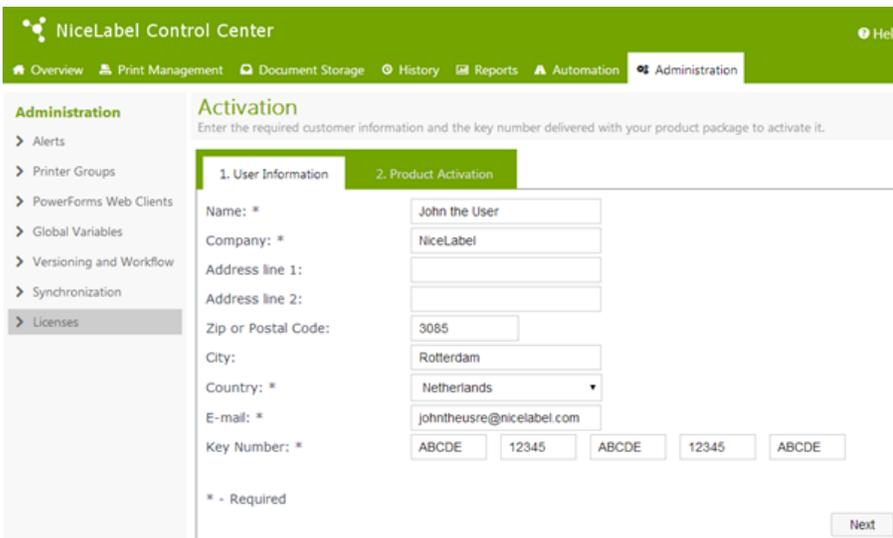
In the NiceLabel PowerForms Web package you have received 25-character Software Key. Activate it inside the NiceLabel Control Center to activate NiceLabel PowerForms Web functionality.

To activate the NiceLabel PowerForms Web server component, do the following:

1. Open **NiceLabel Control Center**. You need the URL to open the Control Center, such as `http://server/EPM`
2. Select the **Administration** tab, then click the section **Licenses**.



3. Click **Activate new product**.
4. Enter the required customer information and the NiceLabel PowerForms Web license key that was delivered in the product package.



- Click **Next**. The Product Activation page opens and the Registration number is generated automatically. If the computer has an Internet connection, you can complete the activation by clicking the **Automatic Activation** button.

If the computer where you started the activation procedure does not have internet access, obtain the necessary activation data on a computer with internet access.

Do the following:

- Write down the **Key Number** and the **Registration Number**.
- Write down the **Activation Web page** address.
- Go to a computer with internet access and enter the **Activation Web page** address in the browser.
- Enter the **Key Number** and the **Registration Number**. Enter other **user information** when prompted.
- Click **ACTIVATE** button to retrieve the **Activation Code**. Write it down.



NOTE: The Key Number, Registration Number, Activation Code and information in other fields are case-sensitive, so be careful when writing it down.

- Go back to the computer where the Control Center Product Activation page is still open.
- Enter the **Activation Code**.
- Click **Finish** button to complete the activation process.

Configuration of Web Printing Clients

Each printing user that will connect to the Web Printing site and will print labels must be defined and activated inside the NiceLabel Control Center. You can define several Web printing users in NiceLabel Control Center, but they can only log into the Web Printing site when they are activated.

Each active Web printing user will consume one license, even if he is currently not logged into the system. The license is not transferable and is bound to one user. If the same printing user logs into his solution from another workstation, the first session breaks, and the user remains connected on the second workstation.



NOTE: For each user you can define the number of multiple logins you will allow from different workstations. In this case the same user login can be used simultaneously from as many workstations as defined in the user properties. Each login takes a license, even if the user is not logged in.

To configure Web printing users, do the following:

- Open the NiceLabel Control Center. You need the URL to open the Control Center, such as `http://server/EPM`.
- Select the **Administration** tab then click the section **PowerForms Web Clients**.

The screenshot shows the NiceLabel Control Center Administration interface. The top navigation bar includes 'Overview', 'Print Management', 'Document Storage', 'History', 'Reports', 'Automation', and 'Administration'. The 'Administration' tab is selected, and the 'PowerForms Web Clients' section is active. The page title is 'PowerForms Web Clients Administration' with the subtitle 'Define the usernames, passwords and associated solutions for the printing operators.' Below this is a table of 'PowerForms Web Clients' with columns for 'Active Name', 'Email', and 'Solution'. The table contains six rows, each with a checkbox in the 'Active Name' column, the name, email, solution URL, and edit/delete icons.

Active Name	Email	Solution
<input checked="" type="checkbox"/> admin		https://TRAINER:8080/exercise2.slnz
<input checked="" type="checkbox"/> anonymous		https://TRAINER:8080/WebPrintEmbedded.slnz
<input checked="" type="checkbox"/> sample		https://TRAINER:8080/sample.slnz
<input checked="" type="checkbox"/> user		https://TRAINER:8080/exercise1.slnz
<input checked="" type="checkbox"/> user1		https://TRAINER:8080/exercise2.slnz
<input checked="" type="checkbox"/> user2		https://TRAINER:8080/exercise2.slnz

- Click the edit button next to the existing user to edit his properties, or click **Add new client**, if no user is already defined.
- In user properties, enable the option **Active**.



NOTE: Each active user will consume one printing license from the pool of available printing licenses and will keep it for as long the user is marked as active, even if he is not logged in. If you enable concurrent users, all concurrent licenses will be taken, even not all users are logged in.

5. Click **OK**.
6. The current user becomes an active user and can log in to the Web Printing site. He can run the associated solution.

Adding Web Printing Client Licenses

To add additional NiceLabel PowerForms Web Client licenses to the existing licenses, do the following:

1. Open the **NiceLabel Control Center**. You need the URL to open the Control Center, such as `http://server/EPM`.
2. Select the **Administration tab** then click the section **Licenses**.
3. Select the **Upgrade** option.
4. In License Upgrade window select **Add licenses**.
5. Enter the **License Pack Key Number** provided in the upgrade package.
6. To automatically generate the activation code, click on the **Automatic Activation** button.
7. The License Pack is activated if the Activation Code is successfully generated.
8. Now you can add and enable additional Web Printing Clients.

Adjusting the Software

Customization

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

Customizing Login Page

When default (Forms) authentication is used, it is possible to customize the contents of the login page. 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. A 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>
```

Customizing Web Printing Page

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>
```

Customizing Out-of-Browser Login

You can control the layout of the login screen that the user sees when the application is running in out-of-browser mode. You can customize the strings the user will see for:

- Text for the 'title' field
- Text for the 'user name' field
- Text for the 'password' field

To customize the out-of-browser login screen, do the following:

1. Open `web.config` in a text editor.
2. Navigate to the section `<appSettings></appSettings>` and insert the following keys:

```
<appSettings>
```

```
<add key="OutOfBrowserTitleText" value="Out of Browser"/>
<add key="OutOfBrowserUserNameText" value="User name:"/>
<add key="OutOfBrowserPasswordtext" value="Password:"/>
</appSettings>
```

3. You can change the values for title of the application and display text for user name and password.

Solution Initialization

When solutions are opened in 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.

User-based Starting Variable Values

Sometimes 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 see only their individual data. 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 variable VAR2 would get the value `Last name`.

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

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>/WebPrinting/default.aspx?Var1=%22First%20name%22&Var2=%22Last%20name%22
```

Offline Mode

Most mission-critical services running on Web servers include the key concern of Internet access and availability. This availability includes two potential problem points:

- Server availability
- Client internet access

The NiceLabel PowerForms Web applications are running inside the Internet browser. Active Internet connection is necessary for the online mode. NiceLabel PowerForms Web also supports offline mode, so you can run your applications even without the Internet connection. This is achieved by installing the application in out-of-browser mode. In this case the PowerForms Web application is installed on the local disk and will run as a standalone application, not as a browser application. Program icon is installed on the desktop.

Enabling the Offline Mode

Do the following:

1. Right click on the application in the Web browser and select **Install Web Printing Client onto this computer...**



NOTE: Offline mode first setup is only possible when the client's internet connection is operational. Plan ahead and install offline mode before there's a problem.

2. A simple offline printing interface is installed, little more than a runner of the Web application which functions as a reliable backup for the times when the client's internet connection fails or prevents server access.

The offline client loads the latest version of the form, label template, and label data (if connected to a database). The offline mode interface can be used for printing in the same way as the browser-based interface.

If the client has no access to an internet connection, the application opens the form and label template that were used the last time. 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.

NiceLabel PowerForms Web logs all printing activities to the NiceLabel 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 NiceLabel Control Center.

Changing the Offline Time Period

By default, the user can run the application in the offline mode for the 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 will be 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 PowerForms Web 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.

Integration into Existing Web Applications

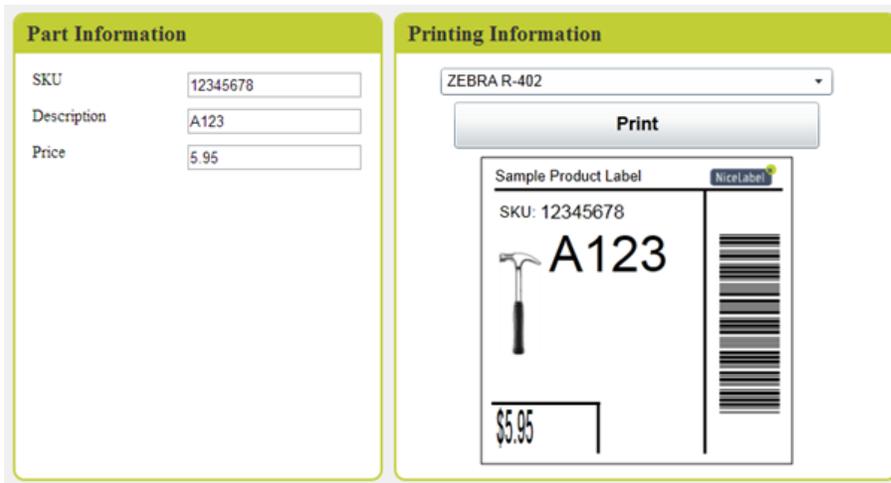
Introduction

In many cases, you will run the PowerForms Web application as the stand-alone application in the browser. The print operator will use the functionality provided in the application user interface to either select the data for label printing or type it in. In this case the users interact with PowerForms Web application directly.

In a lot of cases PowerForms Web serves just as the print engine to some existing hosting Web application. Imagine the Web application that implements the business logic the users need. A professional software company developed it, it uses the user interface defined per corporate standards, and it does its job. However it cannot print out barcodes and send labels to label printers. The needed part, label printing, is not supported. In this case PowerForms Web will be used on a role of the label print engine.

The hosting application will communicate with the PowerForms Web using the exposed Application Programming Interface (API), commanding it which label to print and what data to use. You will use PowerForms Web as a building block within your application.

You can show the user interface of the PowerForms Web application inside the hosting application, or you can hide it. For example, if you must show the live label preview to the user, then you will display the IFRAME element in which PowerForms Web runs. The hosting Web application would send the data to PowerForms Web application, which would generate the label preview and display it inside the hosting application.



The existing application (on left) and embedded PowerForms Web application (on the right)

First, you have to authenticate yourself, so that PowerForms Web knows which solution file must be handed out. The recommended authentication method is token-based authentication.

There are three main steps you have to work on when using PowerForms Web as the print engine inside your existing application:

1. **Embedding the PowerForms Web.** To use PowerForms Web as the building block responsible for label printing within your application, you have to use the HTML element IFRAME. Dependent on the requirements, the IFRAME can be visible to show the PowerForms Web user interface, or you can hide it.
2. **Sending data to the PowerForms Web application (print engine).** The communication between your application and the print engine is established using the HTML5 postMessage API (`windows.postMessage` allows for sending data messages between to frames across domains). Typically, you want to send data for label's variable objects. You will send the name-value pairs (name of the variable coupled with its value) in a form of `VariableName = VariableValue`, each pair in a newline.
3. **Executing actions.** Once the PowerForms Web application has received the data, you can execute actions, such as printing labels. To execute actions, you use the command `RUN <Command>`, where the `<Command>` is name of the button in the PowerForms Web application. The actions defined for the button `<Command>` will be executed. You can have many buttons defined in a single PowerForms Web application and decide which one to run based on button name.

API Specification

Sending data to Web Print Engine

The following messages are available for sending from the hosting application to the PowerForms application:

OUTBOUND MESSAGES	DESCRIPTION
INITIALIZE	This is the first message that needs to be sent from the hosting application to the PowerForms Web applications, and establishes the communication channel between both.
RUN Command	This message will perform execution of the actions, which are defined for a button named Command in the application. This way, the hosting application can execute any sequence of actions configured inside the PowerForms Cloud application.
Message in a form of VariableName=VariableValue	When such message is sent to the PowerForms Web application, it will be parsed and the variables of the same name will be set in the application. This message will also set the variables directly in the label, if the label is displayed in the Label Preview object in the application even if the variables are not defined in the application itself. The message can contain multiple lines, one name-value pair in each line.
GETPRINTERNAMESASXML	Sending this command, the hosting application requests the list of locally installed printers from the PowerForms Web application. The list will be returned to the hosting application as XML-formatted data with a message.
GETPRINTERNAMESASJSON	Sending this command, the hosting application requests the list of locally installed printers from the PowerForms Web application. The list will be returned to the hosting application as JSON-formatted data with a message.
GETDEFAULTPRINTERNAME	Sending this command, the hosting application requests the name of default printer from the PowerForms Web application. The default printer name will be returned to the hosting application with a message.
GETVARIABLEVALUE VariableName	Sending this command, the hosting application requests a value of the specified PowerForms Web variable. The value of the variable will be returned in a message.

Feedback from the Web Print Engine

The following messages can be sent from PowerForms application back to the hosting application:

INBOUND MESSAGES	DESCRIPTION
LOADINGCOMPLETED	This message is sent when the PowerForms Web application is loaded. The hosting application must first send the <code>INITIALIZE</code> command and wait for the <code>LOADINGCOMPLETED</code> message. No other messages must be sent during that time.
PREREQUISITEMISSING Silverlight	This message is sent when there is no Silverlight installed on the client machine. The hosting application must relay the message to the user, so he can install Silverlight. If the window of PowerForms Web application is visible, its user interface will provide the user with the information how to install Silverlight support.
PREREQUISITEMISSING ClientCertificate	This message is sent when there is no client certificate installed on the client machine. This is required for security reasons. The hosting application must relay the message to the user, so he can install the certificate (download link can be provided to the PowerForms Web site). If the window of PowerForms Web application is visible, its user interface will provide the user with the information how to install the client certificate.
PRINTERNAMESASXML	When this message is received (the contents of the first line in the response), all remaining lines in the message contain the list of installed printers formatted as XML data.
PRINTERNAMESASJSON	When this message is received (the contents of first line in the response), all remaining lines in the message contain the list of installed printers formatted as JSON data.
DEFAULTPRINTER	When this message is received (the contents of the first line in the response), the second line contains the name of the default printer on the client's computer.
Message in a form of VariableName=Value	Such message is sent from the PowerForms Web application when the <code>SaveVariableName=Value</code>

ableName=VariableValue

ableData action is executed and the target file is set to #WebPage#.

Sample JavaScript Code

A sample JavaScript code required in the hosting application:

```
var portalFrame;
window.OnLoad = Init;
function receiveMessage(event) {
    if (event.data == "LOADINGCOMPLETED") {
        portalFrame.postMessage("GETPRINTERNAMESASXML", "*");
        portalFrame.postMessage("GETDEFAULTPRINTERNAME", "*");
    }
    else if (event.data.toString().substr(0, 17) == "PRINTERNAMESASXML") {
        // Process the printers in XML format: event.data.toString().substr(19)
    }
    else if (event.data.toString().substr(0, 14) == "DEFAULTPRINTER") {
        // Process the default printer: event.data.toString().substr(16)
    }
    else {
        // Process the variables received from PowerForms application.
    }
}

function Init() {
    window.addEventListener("message", receiveMessage, false);
    // get the IFrame window which contains the PowerForms application.
    portalFrame = window.frames[0];
    portalFrame.postMessage("INITIALIZE", "*");
}

// Just a sample how to set a variable value
function DoSomething() {
    portalFrame.postMessage("Id = 123", "*");
}
```

Authentication

The information in this chapter relates to changes in the Web Printing site configuration file web.config. If you didn't change the path in the installer, the default location for the file web.config is c:\Program Files\EuroPlus\NiceLabel Web Printing\Web.

Token-based Authentication

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

The existing Web application calls an authentication service, passing the user name and password as parameters just once. The return is a time-limited token, which is used in the query parameter when communicating with the PowerForms Web, so it known which solution file (.SLNZ) must be used.

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

Web Service	<code>http://server/webprinting/AuthenticationService/IntegrationService.asmx</code>
Method	<code>public string GetLoginToken(string username, string password)</code>

The workflow that must be implemented on your end:

1. The calling application passes the login data (username, password) by calling a 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 referencing the returned token (GUID) in the URL in the query string:
`http://server/webprinting/default.aspx?logintoken=1351ED23-9C74-411C-C887-40234952A116`
 where you have to replace the server with the name of your server, and webprinting with the exact location where you installed PowerForms Web, and `1351ED23-9C74-411C-C887-40234952A116` with the token you have received from the authentication service.
5. The PowerForms Web will provide 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.

Forms Authentication

The 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 PowerForms Web 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 with the 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 user's username/password in the query string, as the following example shows.

The Web printing site is opened using the URL, such as

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

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

With a default installation of Web Printing site the `<password>` is a 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 `passwordiv` (password initialization vector). The `passwordkey` can have length of 16 or 32 characters, initialization vector must have length of 16 characters.
4. Based on these two values the encrypted password provided in the query string will be decrypted. If the decrypted password

matches the user name and password as defined for the Web printing user in the Control Center, the associated solution will load.

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>/WebPrinting/default.aspx?UserName=test&Password=uEe6X5Cy9Xjhad2PmKlowg%3d%3d`



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

Windows Authentication

When the Web printing site is embedded into a different Web page, the user authentication is likely already done in that Web application with Windows authentication. In such cases, the default behavior of the Web printing site can be changed.

When the 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.

The authentication mode can be changed by modifying the file `web.config` in the Web site root folder.

To change Authentication to 'Windows' allowing all users to access the page:

Previous settings:

```
<authentication mode="Forms" />
```

New settings:

```
<authentication mode="Windows" />
```



NOTE: In addition to changing the configuration of the Web site in the file `web.config`, the Windows authentication mode in IIS manager must be enabled for the Web printing site.

Anonymous Access

This is an authentication mode that disables all login questions. Any user can connect to the Web Printing site and see the solution associated with the user Anonymous (the user Anonymous must exist as a PowerForms Web client in the Control Center). This mode is not suitable for private printing involving several concurrent users, because only one user can be logged in at one time. If somebody logs in while some other user is using the solution, the existing user will be disconnected. The last-connected user forces login.

To enable the anonymous access, change the following settings in the file `web.config`:

Original section:

```
<authorization>
  <deny users="?" />
</authorization>
```

Changed section:

```
<authorization>
  <allow users="?" />
</authorization>
```

You have to change the `web.config` file in the following folders:

- `%PROGRAMFILES%\EuroPlus\NiceLabel Web Printing\Web`
- `%PROGRAMFILES%\EuroPlus\NiceLabel Web Printing\Web\Services`

Anonymous access mode can also be used when the Web Printing site is embedded into an existing Web application and you know which user is logged into existing application.

Setting an authenticated user

The Web printing page can be implemented as part of a different Web page, which includes its own authentication mechanism (which is not Windows authentication from AD). You can avoid additional login steps and use the same login names as used in the existing applications.

Based on the user name from an existing application, you can define which solution will open inside Web printing site. If you do not specify the user name in the query string, the solution for the Control Center user Anonymous will open. You can override the user name Anonymous by providing the user name in the query string or to the `LoginName` control inside the page.

After changing the default authentication mode, the Web printing site needs information about the authenticated Web printing user (`LoginName`) so it knows which solution to open.



NOTE: The solution is always loaded based on the login name – one user has always defined one solution.

The parameter about the user `LoginName` can be passed to the Web printing site in two different ways:

1. Passing the login name as a query string parameter

The Web printing site is opened using the URL, such as

```
http://<server>/WebPrinting/default.aspx?LoginName=userid
```

Where the `userid` is name of the user account defined in the Control Center. If the listed user exists, the solution defined for the user account will open.

2. The user name is provided in an HTML element on the site which hosts the Web printing site in an IFRAME

When the Web printing site is embedded into another Web site, login name information can be provided on the hosting page. If default authentication is disabled and the query string does not include the `LoginName` parameter, the Website will search for an HTML element with the name `LoginName`. If found, its value property will be used for user name to use for login.



NOTE: A single user account can only be used from one client. If multiple clients use the same account (`LoginName`), printing will only be possible from one client

Non-programmable Method to Exchange Data

Transferring values from hosting Web site to the PowerForms Web application

When Web printing is embedded into existing Web pages, the application used in the Web printing solution can be configured to use the action Load variable data in NiceForm. If the file name property of the action is set to `#WebPage#` (include the leading and trailing hash (#) character), the Web printing application will know that you want to read values from the Web page.

Set the variable names in NiceForm to the same names that you use in the HTML input fields, so that action will know how to find them and will map them together.

Transferring Values from the PowerForms Web Application to the Hosting Web Site

You might need to transfer data from the PowerForms Web application to the existing Web page. You can use the action Save variable data while you design your form in NiceForm. If you set the file name to `#WebPage#` (include the leading and trailing has (#) character), the Web Printing component will know that you want to set the values on the Web page.

Set the variable names in NiceForm to the same names that you use in the HTML input fields, so that action will know how to find them and will map them together.

Support

Online Self-help

You can find the latest builds, updates, workarounds for problems and Frequently Asked Questions (FAQ) on the product web site at www.nicelabel.com.

For more information please refer to:

- Knowledge base: <http://kb.nicelabel.com>
- NiceLabel Support: <http://www.nicelabel.com/support>
- NiceLabel Tutorials: www.nicelabel.com/Learning-center/Tutorials
- NiceLabel Forums: forums.nicelabel.com

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

<http://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
<input type="checkbox"/>	What happened? Write down exactly the error message that you get or make a screen shot of the error.
<input type="checkbox"/>	When was the error discovered for the first time?
<input type="checkbox"/>	What did you expect to happen?
<input type="checkbox"/>	Have you discovered the problem earlier?
<input type="checkbox"/>	Can the error be reproduced?
<input type="checkbox"/>	How often did the error occur?
<input type="checkbox"/>	Have you tried to use NiceLabel software this way earlier?
<input type="checkbox"/>	If your problem is coming and going, please describe circumstances and under what conditions the error appears.
<input type="checkbox"/>	Which version of NiceLabel software are you using?
<input type="checkbox"/>	Which version of NiceLabel was used to design the label?
<input type="checkbox"/>	Can you provide the files that you were using when the issue occurred (data files, configuration files, label files, etc.)?
<input type="checkbox"/>	Which printer are you using?
<input type="checkbox"/>	Which version of printer driver are you using?
<input type="checkbox"/>	Which operating system are you using? In which language?
<input type="checkbox"/>	Are you using firewall? Are all the required ports open?
<input type="checkbox"/>	Which version of Microsoft .NET framework is installed?