

Printelligence

Installation Guide

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Printelligence Architecture

Delivered as a hosted service, there are two components that make up Printelligence:

- The Printelligence Client, which is deployed within your organization.
- The Printelligence Application Server (hosted by TechSource360).

The components communicate over the Internet. To ensure the highest level of security, all communication is encrypted using SSL (Secure Sockets Layer).

Printelligence Client

The Printelligence Client is deployed in your organization and is used to track printing activity. When a user prints, Printelligence tracks the printing and analyzes it, determining the number of pages, pages printed in color, page coverage, application, printer used, duplex selection, etc. Based on the information about the print job, Printelligence may or may not display a user notification.

Note:

The print job NEVER leaves your organization's network. Printelligence analyzes the print job internally and only gathers the print-job attributes or meta-data.

To address the different print architectures, Printelligence offers several different deployment options. To learn more, see the "Planning Your Deployment" section in the *Printelligence Administration Guide*.

Printelligence Application Server

The Printelligence Application Server is hosted by TechSource360. It is responsible for delivering the administration portal, as well as storing the meta-data about each print job. This architecture allows for the fast deployment of Printelligence into your organization.

Note:

The availability of the Printelligence Application Server does not affect your organization's printing capabilities. For example, if the TechSource360 hosting service is not available, printing will continue within your organization.

Preparing For Installation

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This section describes the system requirements, impact on workstations and print servers, as well as the planning steps for installing Printelligence.

Note:

The same software package is used for all installations.

System Requirements

The following are the system requirements for both the print server and workstations:

System	Requirements
Operating System	Microsoft Windows 2000 Professional (SP4 or later) or Microsoft Windows XP Professional (SP2 or later) or Microsoft Windows Server 2003 (32-bit and 64-bit) or Microsoft Windows Vista (32-bit and 64-bit) or Microsoft Windows 2008 Server (32-bit and 64-bit) Microsoft Windows 7 (32-bit and 64-bit) Microsoft Windows 8 (32-bit and 64-bit) Microsoft Windows 2012 and 2012 R2
System Software	Microsoft Windows .NET Framework (2.0 SP3 or later)
Disk Space	25 Mbytes
Internet and Firewall	Internet access over SSL (Secure Socket Layer) port 443 * Name resolution between Printelligence-monitored print servers and workstations. Note: This is the recommended default configuration when installing Printelligence on print servers and workstations. Other configurations are also supported. Please contact Technical Support for additional information.
Directory	All workstation user logins must be to an Active Directory domain within your organization. Note: The same software is installed on both the workstations and print server.

Supported Platforms

Along with the basic Windows Operating Systems, Printelligence also supports the following platforms:

- Print Clusters (Active/Passive)
- Terminal Server
- Citrix

Note:

Please note that at this time, Active / Active print clusters are not supported.

Using a Proxy Server

If your organization uses a proxy server, it is highly recommended the Printelligence service run as a Domain Service Account (DSA). While Printelligence can run as the Network Service account, it rarely has sufficient authorization to navigate an organization's proxy server.

Using a Domain Service Account (DSA) with a proxy server creates many advantages:

- The DSA can be set up to communicate through the proxy server to the hosted Printelligence Application Server.
- DSA communication can be restricted to a known IP address range.
- The DSA can be set to a non-expiring password.
- Permissions can be restricted to only those needed to run Printelligence.
- The DSA can be centrally controlled.

The account you select for Printelligence must have the ability to navigate through your organization's proxy server.

Some proxy servers restrict traffic for processes that are allowed to communicate to the Internet and to which IP addresses they can contact. If your organization implements these server settings, you can apply the following:

For process names **prprn.exe** and **prprnct.exe**:

- Allow access to port 443
- Allow access to techsource360smart-print.com

Using a Domain Service Account

If a Domain Service account is used for Printelligence, it must be able to communicate to the hosted Printelligence Application Server over port 443 (SSL).

Note:

Be sure to set up the Domain Service Account PRIOR to starting your installation. Altering the account information after installation is difficult and time-consuming if you have installed Printelligence on all your organization's workstations.

Securing the Domain Service Account

The Domain Service Account you install should be secured with Group Policy in accordance with your security policies for Service Accounts, or Microsoft's Service Account Guidelines available at <http://www.microsoft.com/>

Applying Security Settings

If your organization does not currently have security policies in place for locking down service accounts, TechSource360 recommends at a minimum that you apply the following settings:

Account	Settings
User Account	<p>Set Password to never Expire.</p> <p>Use complexity requirements:</p> <ul style="list-style-type: none">• Minimum Password Length 8 with Special Characters).• Avoid using these special characters: \ “ < > & (A password with these characters cannot be passed on the command line when you attempt to create an Administrative Installation Point.)
Group Policy	<p>Deny logon locally (User Rights Assignments).</p> <p>Disable Shut Down the System (User Rights Assignments).</p> <p>Account Lockout Policy (3 Invalid attempts lock the account for 10 minutes).</p> <p>Requires Logon as a Service (User Rights Assignments).</p> <p>Deny log on through Terminal Services (User Rights Assignments).</p> <p>Disable Allow Logon Locally (User Rights Assignments).</p> <p>Set options to Enforcement (no override). Takes precedence over any Group Policy Object linked to child containers.</p> <p>Set Block inheritance flag.</p> <p>Create account as an Organization Unit-controlled subtree.</p> <p>Enable auditing on controlled subtree.</p> <p>Use the AdminSDHolder function; compares the privilege level every hour and ensures that the settings have not been altered.</p>

Using a Network Service Account

Printelligence can be installed to run under the Network Service account. The advantages of using the Network Service account are as follows:

- Network Service is a built-in account defined on your workstations and servers.
- The Network Service account has sufficient privileges to run Printelligence.

The disadvantage with using a Network Service Account is that information does not have permission to pass through the proxy server in most organizations.

If your organization is contemplating moving to a proxy server in the future, you must change the login credentials for every Printelligence installed in the organization.

Notes:

- Windows 2000 does not have a Network Service account. In this environment, Printelligence uses the Local System account in place of Network Service.
- Always use a Domain Service Account if one is available. Only use the Network Service account if you are sure there is no requirement to navigate through a proxy server.

Impact on Workstations and Servers

Printelligence does not interfere or change your existing printing environment. It does not change your existing print queues or print drivers.

Note:

Printelligence does **NOT** alter or change your existing print infrastructure.

Planning Checklist for Installation

The Printelligence installation takes only minutes to complete. Before starting however, you will need some basic information about your organization's environment.

Below is a Pre-Installation checklist of the information required before starting the installation.

Pre-Installation Checklist

Item	Comments
Registration Information	The Company Name and Registration Key provided by TechSource360.
Proxy Information	If your organization uses a proxy server, you will need to confirm the proxy information during installation.
Domain Service Account Information	If your organization uses dedicated service accounts to run Windows Services, you will need the Domain Service Account information.
Internet Access	Printelligence requires Internet access to communicate with the hosted Printelligence Application Server. Internet access is tested during installation.

Additional Installation Notes

The Printelligence installation package includes the following:

- Standard MSI (Microsoft Windows Installer) package when deploying to the desktop.
- An installation package that is the same for workstations and print servers.
- Industry-standard installation procedures, including a completely automated uninstall procedure, should it be necessary.
- Installation without the need to reboot the workstations or print servers.
- The ability to be silently installed in many different ways, including SMS (Systems Management Server) or any other network-management technology that can use an MSI.
- An application footprint which is only 25 Mbytes.

Printer Drivers

A custom print driver is not installed with Printelligence. Use the same print drivers you have already installed.

- When you add a new printer or driver, Printelligence automatically monitors it. You do not have to take any additional action for the printer or driver to be monitored by Printelligence.
- We do not change any of your existing print drivers, print processors, port monitors or any print-environment setting. You can be sure the print environment you have today will be the same environment after installing Printelligence.
- We do not install a new print spooler. Continue to use the Windows print spooler.

Installing to Workstations and Print Servers

To install Printelligence:

1. Launch the Printelligence set-up program by double-clicking **PrintelligenceSetup_4.1_platform.exe**; the **Install Shield Wizard** appears. (Where **platform** is **x86** or **x64**, depending on whether you are installing the application on a 32-bit or 64-bit operating system).
2. Click **Next**; the **License Agreement** appears.
3. To accept the licensing agreement terms, Select **I accept the terms in the license agreement**.
4. Click **Next**; the **Registration Information** window appears.
5. Enter the **Company Name** and **Registration Key** information for your organization.
6. Click **Next**; the **Destination Folder** window appears.
7. Click **Next**; the **Proxy Server** window appears.
8. Make your selection based on whether your organization uses a proxy server.
9. Click **Next**. If you selected “Yes” in the Proxy Server window, the Proxy Server Settings window appears.
10. Click **Next**; the **Logon Information** window appears.
11. Select the account where you wish to run the Printelligence service.

Note:

If you use a proxy server in your organization, you must select **This Account** and enter the Proxy server’s domain account credentials.

12. Click **Next**; the **Ready to Install the Program** window appears, asking if you want to review or change your installation settings.
13. Click **Install**; the Setup program will now verify your network connection.
14. Click **Install**. If the connection test fails, the **Connection Test** window appears. To review your settings, click **Back**.
15. Click **Install**. After a few seconds, if the Setup is unable to establish a network connection, you will see the following error message:

Verify that your connection to the Internet is active

Verify that you specified the correct proxy settings

16. If you are using a proxy server in your organization, ensure that you have selected a valid domain account and not the Network Service Account in the **Logon Information** window.

Note:

Many organizations do not permit Network Service accounts access to the Internet through a proxy server.

17. After you have checked your settings and verified that you have an active Internet connection, click **Install** again; the **InstallShield Wizard Completed** window appears.
18. Click **Finish**. Printelligence has successfully installed.

Ensuring Printelligence is Running

Printelligence is not installed into the Start Menu of Windows; it runs as a service. To confirm that Printelligence is running:

1. Open the Services Panel.
2. Locate the entry for the **Printelligence** service; the status of the service is displayed.

Performing an Unattended Installation

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For information on performing an unattended installation (including how to generate an MSI file), as well as unattended uninstallation, please see the Printelligence Unattended Installation Guide.

Installing to Print Clusters

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For information on installing Printelligence into a Print Cluster environment, please contact Technical Support at 1-866-432-9775.

Installing Printelligence on a Terminal Server

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Printelligence has no special requirements for installation on a Microsoft Terminal Server.

To install Printelligence on a Terminal Server:

1. Ensure that you are logged into the Terminal Server at the console or through a remote session.
2. Start the Printelligence installer and complete the installation as noted in “Installing Printelligence to Workstations and Print Servers.”

Impact on User Sessions

Each user initiating a Terminal Server session is assigned a Printelligence Client. The Printelligence Client is represented by an icon in the System Tray and functions the same as if Printelligence had been installed on a user’s workstation.

Impact on System Resources

- Each user session is assigned a Printelligence Client, taking up approximately 1 Mbyte of memory.
- The Printelligence Service is shared between all user sessions. The Printelligence Service requires about 10 Mbytes of memory.
- An additional amount of memory is required when a print job is created through a Terminal Server session. The amount of memory is dependent on the size of the spool file, the complexity of the document, and the nature of the user notification triggered (if any).
- All memory allocated during analysis and business-rule presentation is immediately recovered when the print job completes.

Installing Printelligence on a Citrix Server

Printelligence has no special requirements for installation on a Citrix Server.

To install Printelligence on a Citrix server:

1. Ensure that you are logged into the Citrix Server at the console or through a remote session.
2. Start the Printelligence installer.
3. Complete the installation procedure following the instructions in “Installing Printelligence to Workstations and Print Servers.”

Impact on User Sessions

Each user initiating a Citrix server session is assigned a Printelligence Client. The Printelligence Client is represented by an icon in the System Tray and functions the same as if Printelligence had been installed on a user’s workstation.

Impact on System Resources

- Each user session is assigned a Printelligence Client, requiring approximately 1 Mbyte of memory.
- The Printelligence Service is shared between all user sessions. The Printelligence Service requires about 10 Mbytes of memory.
- An additional amount of memory is required when a print job is created through a Citrix server session. The amount of memory is dependent on the size of the spool file, the complexity of the document, and the nature of the user notification triggered (if any).
- All memory allocated during print-job analysis and business-rule presentation is immediately recovered when the print job complete

