

# Xerox Print Agent 6.2

## Security and Evaluation Guide



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Changes are periodically made to this document. Changes, technical inaccuracies, and typographic errors will be corrected in subsequent editions.

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# How to Use this Guide

This guide is designed to help customer organizations certify the deployment of Xerox Print Agent (XPA). The document contains information related to XPA's potential impact to security, enterprise IT infrastructure, network traffic, resources, and required planning.

## Intended Audience

This guide is used by the customer's IT, security, and management organizations as well as by Authorized Xerox Print Services providers. Before certifying XPA, customers and appropriate Xerox personnel should have a clear understanding of:

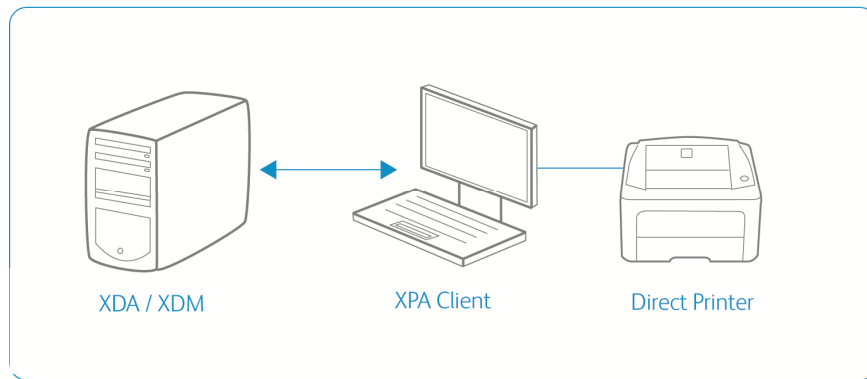
- The IT environment at the site where XPA will be installed
- The network Topology to ensure connectivity
- Any restrictions placed on applications that are deployed on that network
- The Microsoft Windows® operating system



# Introduction

The Xerox Print Agent runs on Microsoft®-based print servers and workstations. It can be deployed in a number of ways to suit the work processes and network needs.

When the XPA is installed on a print server or workstation, it is ready to start collecting direct printer information. Direct printers are non-networked, typically desktop printers.



**Figure 1: XPA Collects Information about Direct Printers**

The data that XPA can collect from direct printers varies, depending on level of PJI and PML support.

- **Discovery Queue Data and Driver:** Server/Manufacturer/Model/Location +
- **Select\* PJI Printers:** Serial Number and Page Count +
- **Select\* PML-Based HP Printers:** B&W and Color Impressions

\*Dependent on printer implementation

# Installation

## XPA Deployment Options

The XPA installer is available as an executable (.exe) file, in both 32 bit and 64 bit versions. Xerox Print Agent must be installed on Windows®-based print servers and/or the end-user's Windows®-based computer. The Xerox Print Agent software can be deployed in the following ways:

- Installed manually by local administrators
- Put on a Windows® file share for end-users to access and install
- Added to a company desktop software image CD
- Pushed via an SMS-type application

## XPA Installer Size

- The XPA Installer Setup.exe size is approximately 18 MB.
- The Microsoft®.NET 3.0 Framework is available (bundled) in a version of the XPA installer, which increases the size to 70 MB (for 32 bit) and 105 MB (for 64 bit).

## Permissions Required for Installation

The installation of XPA requires Administrator privileges on the target machine. Once installed, Administrator rights are not required for XPA to function properly.



# Command Line Operations for XPA Installer

In the event that you need to execute the XPA installer from a batch file, the installer needs to be instructed to execute in **silent mode**, where it will install itself without user interaction. To do this, you can use the following command line invocation:

```
SETUPEXENAME /S /v"SMS=true SERVERTYPE=XDA SERVERNAME=XDASERVERNAME  
XPA_LANGID=de"
```

/S = silent mode

/v "variables separated by spaces" Variable Definitions

SMS=true (must be set to true for an automated installation)

SERVERNAME=<server to validate>

SERVERTYPE=XDA (only use if XDA server being configured)

SERVERPORT= This property is used to define a port value required for UI validation against the chosen servertype and servername properties. XDA has a default port value of 23800

XPA\_LANGID is optional and defaults to English if not provided. Other options are:

En – English

De – German

Es – Spanish

Fr – French

It – Italian

Pt– Portuguese

**Example:** XPASetup.exe /S /v"SMS=true SERVERTYPE=XDA  
SERVERNAME=xdmserver.sdi.na.xerox.org"

**Note:** These commands must be executed from an account that has Administrative privileges on the target computer.

# XPA Installer Manual Steps

The XPA installer can also be run in verbose mode, by double-clicking the .msi or .exe file. The installer screens and brief descriptions are shown on subsequent pages.

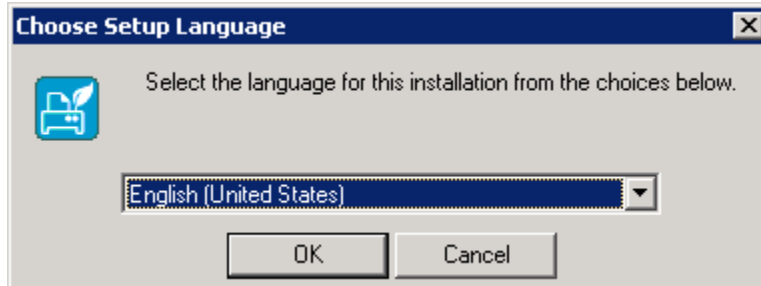


Figure 2: XPA Language Selection Screen



Figure 3: XPA Installer Splash Screen

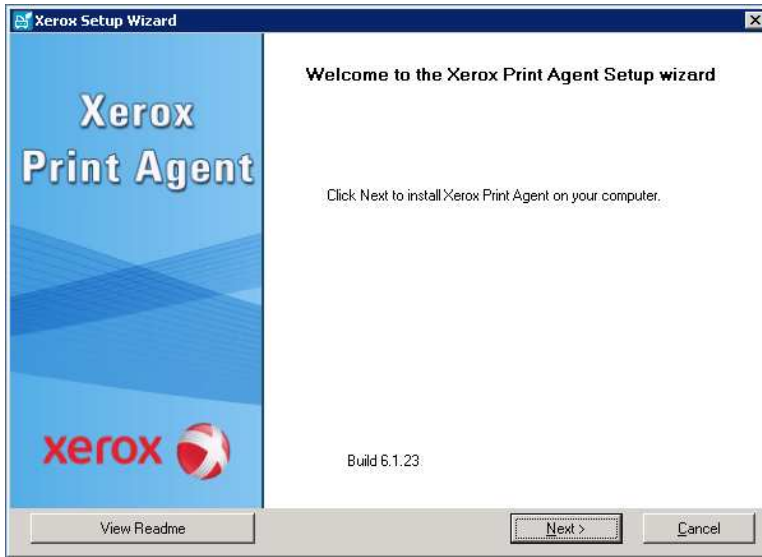


Figure 4: View Readme on this Screen, and click Next to Continue

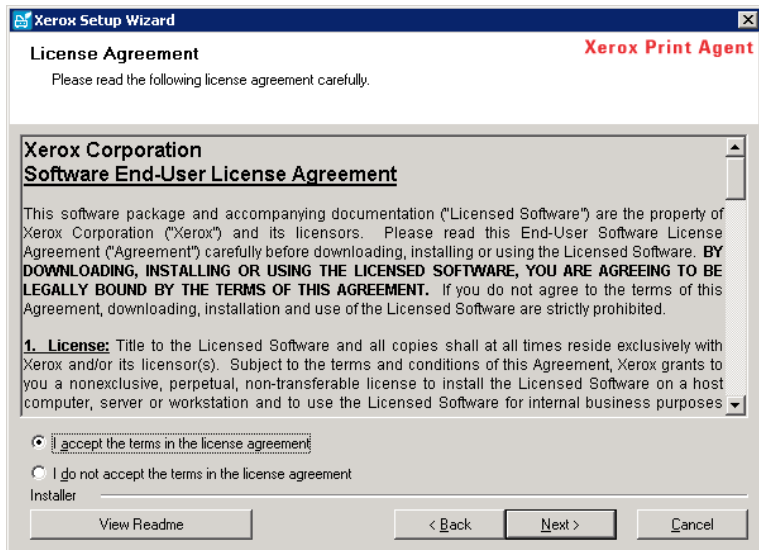
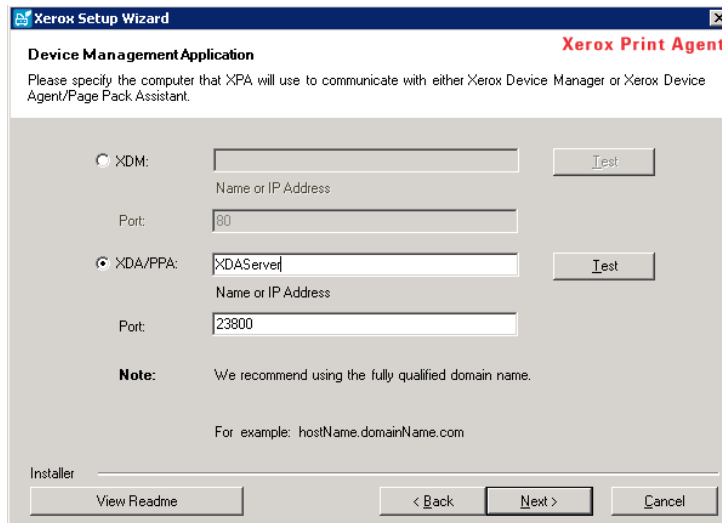
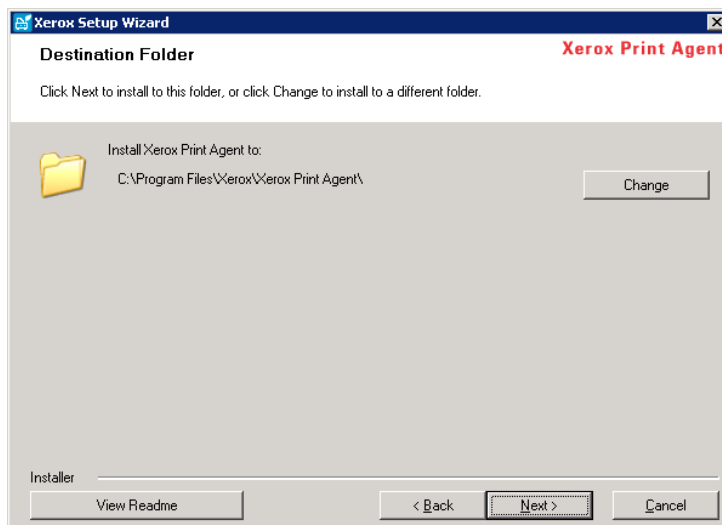


Figure 5: XPA License Agreement



**Figure 6: Enter XDA/PPA Server Name or IP Address**

**Note:** Default port is 23800



**Figure 7: XPA Installation Location**

**Note:** Default is shown above. This can be changed if needed

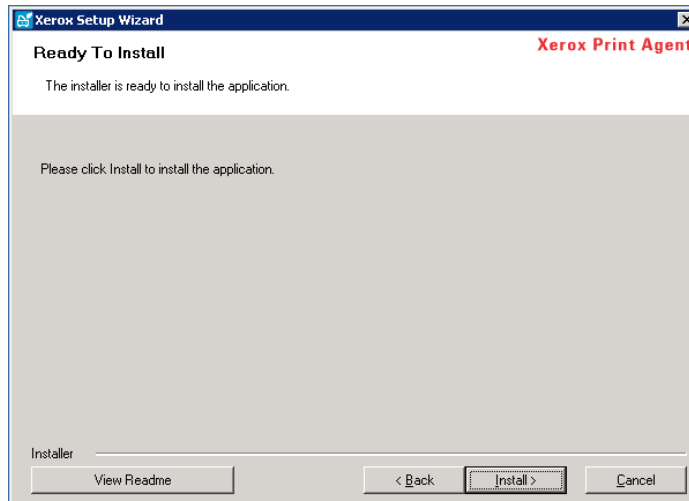


Figure 8: Last Chance to Make Changes to Installer Configuration

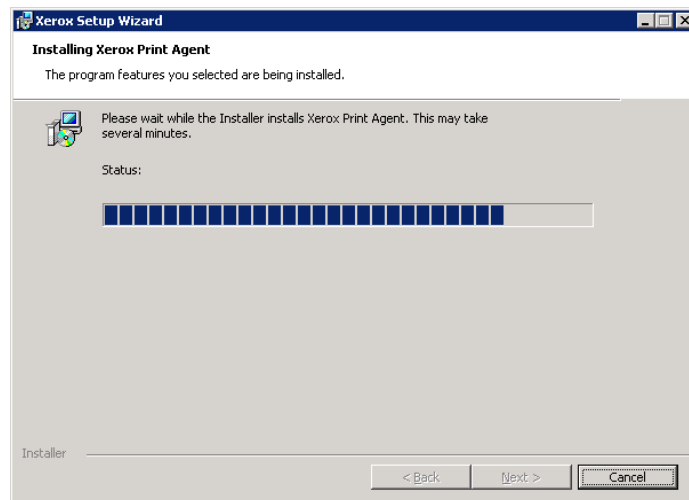


Figure 9: XPA Installer Progress Screen

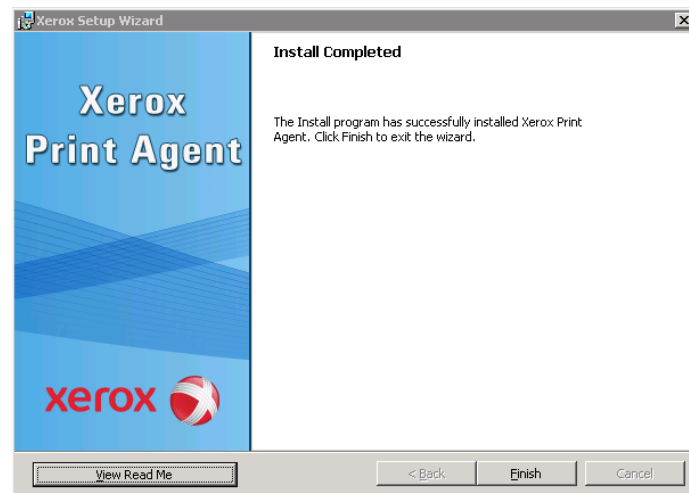


Figure 10: Installation Complete

# XPA Removal Options

You can remove the XPA agent from clients manually or automatically.

## Manual Removal (Normal and Error Recovery)

**Normal:** If you want to remove the agent manually, use the Add/Remove Programs functionality of the operating system; the same manual removal method you would use for other applications. The program name is “Xerox Print Agent.”

**Error Recovery:** The Xerox Print Agent installer will roll back automatically if a problem occurs during installation. The methods for uninstalling the Xerox Print Agent are listed below:

- Add/Remove Programs Functionality of the Windows Operating System
- **MSIEXEC:** Provides the means to install, modify, and perform operations on Windows Installer from the command line. Example: `msiexec /qn /x {ProductCode}`
  - The Product Code can be obtained from the C:\Windows\Installer Directory or the Registry
  - The MSIEXEC executable should already be installed on the target operating system and can be run from the DOS command line.
- **MSIZAP:** A cleanup program called “Msizap.exe” from Microsoft is available, which is a command utility for removing all Windows Installer information for a product. This tool is available here, [http://msdn.microsoft.com/en-us/library/aa370523\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/aa370523(VS.85).aspx) It is recommended that you contact Global Development Worldwide Software Support first if you encounter these issues (support information can be found in section 5.8 of this document).
- In the unlikely event of a partial install (as a result of a catastrophic failure), sections 5.3, 5.4, and 5.5 of this document show which files and modifications need to be removed from the target system

# Xerox Print Agent Certification Summary

## XPA Certification Checklist

Step	Description	Section
<input type="checkbox"/>	<b>XPA Prequalification:</b> Review Operating System and Hardware Requirements for XPA. Ensure Compatibility with Client Machines, Servers, and Printing Environment.	
<input type="checkbox"/>	<b>Certification Environment:</b> Obtain sampling of client machines and servers. Also, obtain access to printers & MFDs in use by customer. Establish a testing/certification environment. This environment needs to be representative of the customer's environment (e.g. operating systems, group policies, domain access, virus software, printers & MFDs, etc.)	
<input type="checkbox"/>	<b>XPA Installation:</b> Install XPA in the Certification Environment. Eventual deployment method for XPA on company-wide basis should be verified here (e.g. If customer plans to use SMS type method to deploy XPA, verify this method works).	
<input type="checkbox"/>	<b>Test XPA Communication:</b> Verify XPA to XDA Communication.	
<input type="checkbox"/>	<b>Test Printing:</b> Ensure printing still functions properly on client machines and servers in certification environment.	

# Xerox Print Agent Hardware and Software Requirements

## XPA Client and Server Hardware Requirements

- Minimum 500 MB RAM
- Intel Pentium 4 Processor.
- 1 GB Minimum Free Disk Space (more required if installed on busy print server)

## XPA Client Software Requirements

If you want to collect local printer information, you must install the Xerox Print Agent (XPA) on print servers and client PCs that have attached local printers. You can install and execute XPA on any computer that supports the following operating systems:

### **Operating Systems Supported**

- Windows® XP SP3
- Windows® XP x64 SP3
- Windows Server® 2003 SP2
- Windows Server® 2003 x64 SP2
- Windows Vista® Professional SP2
- Windows Vista® Professional x64 SP2
- Windows Server® 2008 SP2
- Windows Server® 2008 x64 SP2
- Windows Server® 2008 R2
- Windows Server® 2008 R2 x64
- Windows® 7
- Windows® 7 x64

### **Operating System Configurations Not Supported**

- Windows NT® 4
- Windows® 2000
- Windows® Workgroups
- Windows® systems running the Novell client.
- Macintosh®
- Unix/Linux
- Non-NTFS partitions
- Operating systems running Terminal Services
- Citrix Environments



## Upgrade Job Tracking Agent (JTA)

If XPA detects the Job Tracking Agent (JTA) is already installed, it will automatically uninstall JTA, and then proceed with XPA installation. Supported version of JTA for this upgrade capability is 5.0.5

## Microsoft® .NET Framework 3.0 Required

The Microsoft® .NET Framework 3.0 must be installed on client machines and servers before XPA can be installed. The .NET Framework 3.0 is available from Microsoft's web site, and is also available in a bundled version of the XPA installer.

# Xerox Print Agent Printing Ports Requirements

XPA uses the following standard Windows Port Monitors:

- LPT – legacy parallel port interface to local printer
- USB – newer hardware interface to local printer
- TCP/IP – IP printing to a networked printer, over any port monitor, through a print server or direct to printer

## Windows Firewall Exceptions

During installation, Xerox Print Agent will automatically enable exceptions in Windows Firewall Settings. Exceptions are made for Xerox Print Agent and for Print Client Messenger (a component of Xerox Print Agent). These exceptions are required so that these components can communicate with each other and with Xerox Device Agent.

**Note: When XPA is configured with XDA, the XPA to XPA communication path is not utilized, but the exceptions are still added to the Windows Firewall Settings.**

In Windows Firewall Settings, you will see the following two programs added to the Exceptions list:

- Print Client Messenger
  - (port 23700, inbound/outbound WCF port for XPA to XPA communications)
- Xerox Print Agent
  - (port 23900, inbound/outbound WCF port for XPA to XPA communications)
  - (port 23800, outbound WCF port for XPA to XDA communications)

XPA has been tested with the Windows Firewall. If you are using Security/Firewall Software other than Microsoft, you will have to make exceptions for these applications to run.

# XPA Directories and Files

## Default Installation Directory

The default installation directory for Xerox Print Agent is **c:\Program Files\Xerox\Xerox Print Agent**. This directory can be changed during installation time as shown in the previous installer screens.

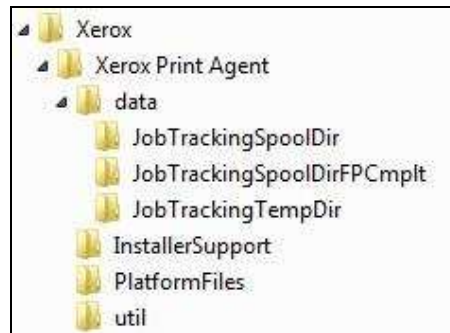


Figure 11: Installation Directory Hierarchy

## Other XPA Directories and Files

XPA also creates directories for storing cached rules, chargeback codes, activity log information, custom logo, and custom text. Listed below are these directories for 32 bit systems.

**Note:** These directories are created but not used when XPA is configured with XDA.

### Windows® Server 2003 and Windows® XP:

File: cache\_rules.xml

Location: C:\Documents and Settings\All Users\Application Data\Xerox\Xerox Print Agent

Files: custom logo (image file)

Location: C:\Documents and Settings\All Users\Application Data\Xerox\Xerox Print Agent\TitleBarIcon

Files: ActivityLog.xml, Chargeback.xml

Location: C:\Documents and Settings\{logged in user}\Local Settings\Application Data\Xerox\Xerox Print Agent

### Windows Server® 2008, Windows Vista®, and Windows® 7:

File: cache\_rules.xml

Location: C:\ProgramData\Xerox\Xerox Print Agent

Files: custom logo (image file)  
Location: C:\ProgramData\Xerox\Xerox Print Agent\TitleBarIcon

Files: ActivityLog.xml, Chargeback.xml  
Location: C:\Users\{logged in user}\AppData\Local\Xerox\Xerox Print Agent

## XPA Services

The Xerox Print Agent installs a new service called “XrxXgsPrintAgent” that is started automatically. This service creates a process called PrintClientMessenger.



Figure 12: PrintClientMessenger

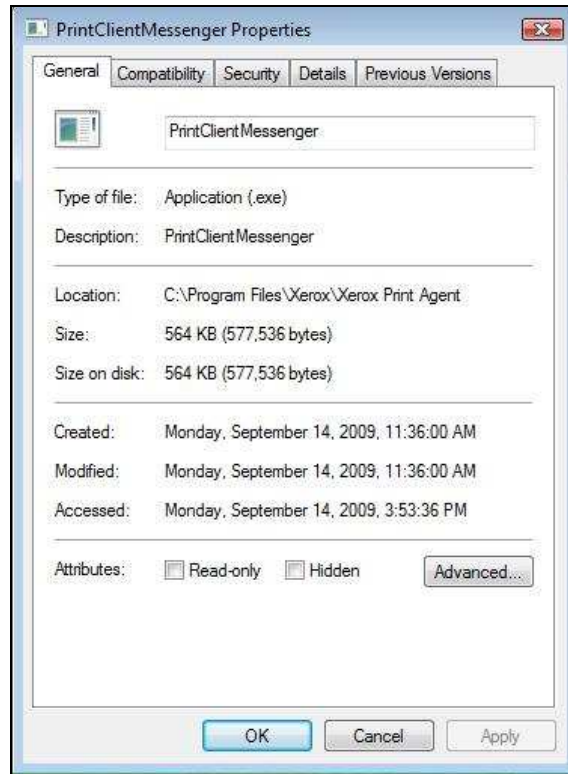


Figure 13: PrintClientMessenger Properties

## XPA Registry Values

The Xerox Print Agent Registry Values are located here:  
 HKEY\_LOCAL\_MACHINE\SOFTWARE\Xerox\JobTracking

The registry entry names and values are listed below:

```

"JobManagerUpdateTime"=dword:4ab0f9b8
"LastCommunicationTime"="9/16/2009 10:15:29 AM"
"InstallType"="new"
"ServerConnectionString"="http://192.168.0.1:80/jobtracking/jobaccounting.asmx"
"CommunicationFailureTimeout"=dword:00002760
"ProducerAliveTime"="10:44:08"
"ApplicationStartedDateTime"="09/16/2009 10:15:28"
"ConsumerAliveTime"="10:44:00"
"Logging"=dword:00000001
"DataDir"="C:\Program Files\Xerox\Xerox Print Agent\"
"FailureRemovalTimeOut"=dword:0000003c
"PrintMessengerPort"=dword:00005c94
"ServerType"="XDM"
"RemovalDate"="null"
"HandShakeInterval"=dword:000002d0
"ReportingTimeInterval"=dword:00000000
"ReportingTimeHour"=dword:00000000
"ReportImmediate"=dword:00000001
"EmailAlertsEnabled"=dword:00000000
"ProductVersion"="6.1.8"
  
```

"InstalledDate"="09/14/2009 15:53:44"  
"ProductCode"="{dd405156-cf0c-40d1-a3b2-45f721c3db8c}"  
"ProductLanguage"="en"  
"PrintAgentPort"=dword:00005d5c  
"SSEnabled"=dword:00000000  
"CustHeaderEnabled"=dword:00000001  
"CustHeaderText"="Test"  
"CustHeaderBackColor"=dword:00bacfee  
"CustHeaderTextColor"=dword:00d92231  
"CustHeaderLogoPath"="C:\\ProgramData\\Xerox\\Xerox Print  
Agent\\TitleBarIcon\\customlogo.gif"  
"TrayEnabled"=dword:00000001  
"TrayMenuServiceEnabled"=dword:00000001  
"TrayMenuServiceName"="Xerox Services Portal"  
"TrayMenuServiceURL"=" <custom URL > "  
"LocalPrinterMeterReadInterval"=dword:00000000  
"ConfirmTimeOut"=dword:00000708

XPA does not modify or replace any system files, but the following registry entries are modified:

HKEY\_LOCAL\_MACHINE\\SYSTEM\\CurrentControlSet\\Control\\Print\\Monitors\\Local Port

HKEY\_LOCAL\_MACHINE\\SYSTEM\\CurrentControlSet\\Control\\Print\\Monitors\\Standard TCP/IP  
Port

HKEY\_LOCAL\_MACHINE\\SYSTEM\\CurrentControlSet\\Control\\Print\\Monitors\\USB Monitor

The Windows Port Monitor DLLs referenced by these entries are replaced with custom DLLs used by Xerox Print Agent. This is called Port Monitor Shimming. All print jobs to these port monitor types first pass through the XPA Port Monitor Shim DLLs, and then to the original Windows Port Monitor DLLs.

# XPA Network Traffic Overview and Calculations

## XPA Local Device Management with Xerox Device Agent

When used in the capacity of Local Device Management, the Xerox Print Agent communicates with Xerox Device Agent (XDA) via Windows Communication Foundation function calls over TCP/IP.

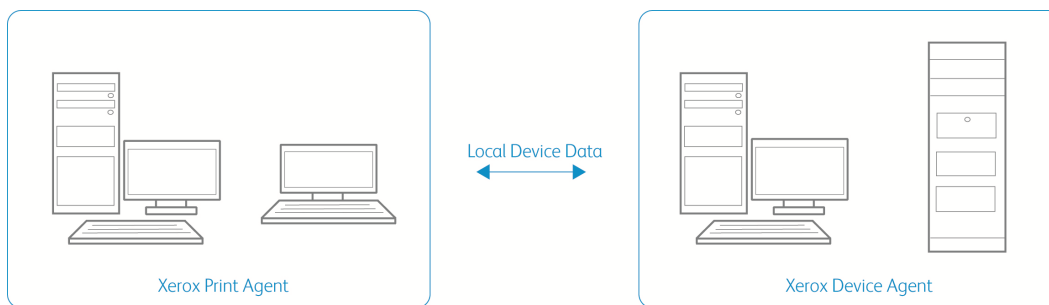


Figure 14: XPA Local Device Management

### XPA Local Device Management XPA Network Traffic

The above diagram characterizes network traffic generated by Xerox Print Agent when used with XDA for Local Device Management (desktop printer management).

#### XPA Local Device Data Message to XDA

The XPA Local Device Message sends information about the locally attached printer (desktop printer), if one is installed. This information includes meters, status, and consumable levels.

**Period:** Occurs automatically when a change of status is detected on the locally attached printer.

#### Breakdown of Local Device Message:

Store Local Device Data: ~750 bytes to ~2 Kbytes per Local Printer