

LOCAL PRINT AGENT



OVERVIEW

The Local Print Agent is used to collect information from local printing devices. The technology of the local device determines the information reported to the Local Print Agent (older, lower-end devices may report less information than newer, higher-end devices), but the Local Print Agent attempts to collect the following information:

- Manufacturer
- Device description
- Serial number
- OS version of Local Print Agent Host
- IP address of the machine the Local Print Agent is installed on (Local Print Agent Host)
- Asset number
- Location
- Meter reads
- Miscellaneous (machine specific)
- Name of the account used to run Local Print Agent service

No print job or user data is collected.

HOW DOES IT WORK?

The Local Print Agent launches as a service on the machine on which it is installed. The service communicates with the Printer DCA through the IP address of the machine using TCP and UDP port 35. The Local Print Agent uses PDL to collect information directly from local devices.

The traffic created by the Local Print Agent per local device is comparable to traffic for a network printer. For example, if there are three local devices, the size of data is approximately equivalent to the combined traffic from three network printers.

The Local Print Agent is idle except when directed by the Printer DCA to perform a query. The frequency of queries can be adjusted in the Printer DCA settings.

INSTALLATION INSTRUCTIONS

Local Print Agent collects information directly from locally connected printing devices and passes the information to the Printer DCA. To do this the Local Print Agent software must be installed on each computer connected to a local device from which you want to collect information.

Ideally, Local Print Agent should be installed on all computers at any location where you want to collect local device information. This would allow you to collect information from new local devices as soon as they are connected.



SYSTEM REQUIREMENTS

Each workstation on which you install Local Print Agent must have the following:

- Windows operating system (XP and higher supported)
- Microsoft .Net Framework 2.0 SP1 (or higher)
- Ports 35/UDP and 35/TCP must not be used by any other applications

In addition, if you are installing Local Print Agent using push technology, each workstation must have one of the following enabled and accessible:

- Windows Management Instrumentation (WMI)
- Remote Registry services

BEFORE YOU START

Before starting to install Local Print Agent, consider the following (and take the appropriate steps where necessary):

- Do you want to use push technology to install Local Print Agent? If so, ensure WMI or Remote Registry services are installed on each machine where you want to install the Local Print Agent. You will also need the credentials of a user that belongs to the local administrator group on the target OS for each machine.
- Do you want to install Local Print Agent on all machines, or just those that are currently connected to local devices? There is a different procedure to follow depending on what you want to do, so you need to make a decision.
- Do the machines have .Net Framework 2.0 SP1 (or later)? If not, you must install .Net Framework 2.0 SP1 (or later) on each machine where you want to install the Local Print Agent.
- Determine the IP addresses/ranges of machines connected to local devices.
- Do any other applications use port 35/TCP and 35/UDP? If so, you must identify and resolve the conflict.
- Do you need to collect information from OfficeJet, DeskJet, Dot Matrix, or InkJet devices? Unfortunately we can't support these models yet.

INSTALLING LOCAL PRINT AGENT

There are three steps that must be taken to collect local device data using the Local Print Agent:

1. Add the IP addresses/ranges of computers connected to local devices to the Printer DCA network scan.

BEST PRACTICE: When deploying the Local Print Agent to multiple subnets, create a separate profile for each subnet range. Deploy the Local Print Agent one subnet at a time to reduce the amount of network traffic generated, as well as reduce the system resources used on the server for the install.

2. Enable the local device scanning option.
3. Install the Local Print Agent software on each computer connected to a local device from which you want to collect information. Depending on the circumstances at your site, there are three methods you can choose from to install Local Print Agent:
 - Third-party push tool installation
 - Printer DCA push tool installation (manual or automated)
 - Manual installation (from the local printer host computer)

Note: If necessary, see the Troubleshooting section of this document for additional information about Push Installs.

BEST PRACTICE: If you already have a push install system in place, Upstream recommends that you use it to install the Local Print Agent software. Otherwise you can use the Printer DCA software to push the installation.

If a firewall is in place, you must also configure it to allow Port 35/TCP and 35/UDP.



THIRD-PARTY PUSH TOOL INSTALLATION

If your site already uses a third-party push installation tool, you can use that to push install the Local Print Agent.msi file. The installation file can be found in the Printer DCA\support folder on the system installed with the Printer DCA (its default location).



PRINTER DCA PUSH TOOL INSTALLATION

The Printer DCA has an embedded push tool specifically for Local Print Agent. In addition, you can schedule periodic push installs to your entire Printer DCA scan range to ensure that Local Print Agent gets installed to any new computers on the network.

To push install Local Print Agent from the Printer DCA:

1. Under the Scan tab, make sure the correct scan profile is selected from the Scan Profile list.
2. On the Tools menu, select Local Agent Management.
3. Click Scan All. This will scan all IP addresses included in the selected scan profile.
4. Under the IP Address column, click to select the check boxes beside each IP address belonging to a computer you want to install Local Print Agent on. Optionally, click All, None, Not installed, or Installed to automatically select a set of IPs.
5. If you are not currently logged onto the computer as an administrator, in the Credentials area, click Change. Enter the local administrator credentials (for the target OS) in the Username, Password, and Domain boxes, and then click OK.
6. Click Install.

To schedule regular push installs using the Printer DCA:

1. Under the Scan tab, make sure the correct scan profile is selected from the Scan Profile list.
2. Under the Local tab, select the Enable Push Install check box.
3. In the Change Push Install Credentials screen, enter the credentials of the user that belongs to the Domain administrator group. **NOTE:** The user must also belong to the local administrator group on the target OS.
4. Beside Start, select a start date and time for the automated push install.
5. Beside Repeat, select the interval at which you want to perform the push install.
6. Click Save.

MANUAL INSTALLATION

In environments that do not allow push installation tools, you must install the Local Print Agent software manually on each computer connected to a local printing device.

To install Local Print Agent:

Run the Local Print Agent.msi file on the computer. The installation file is found by default in: program files\Printer DCA\Support folder.

The installation file can be copied to a USB drive, CD, etc. for portability.



KNOWN ISSUES

Local Print Agent only supports devices:

- Using Lexmark engines
- Using Kyocera Mita engines (Note: Kyocera Mita devices that do not implement basic PjL require the KX Driver.)
- Using OKI engines
- Using HP engines (or HP-based devices)
- Implementing basic PjL

Please ensure the correct specific driver is installed for the local device. With the exception of the Kyocera KX Driver, universal print drivers generally won't work with Local Print Agent. With Windows 7, you may be forced to use a Universal Print Driver, in which case you likely won't be able to receive information from the device via Local Print Agent.

Please avoid installing a Local Print Agent to detect any OfficeJet, DeskJet, Dot Matrix, or any other InkJet print devices as it may cause extraneous print jobs to be created.

TROUBLESHOOTING

For help with the push installation, see Push Install Issues.

If the installation was successful but you are not finding the devices you were expecting, see Not Finding Devices.



PUSH INSTALL ISSUES

1. Did the MSI file copy to the remote machine?
 - a. Open the Run dialog and enter "\\IP or hostname\admin\$" and hit enter.
 - If a window opens with a message similar to "The network resource is unavailable or does not exist", this may be related to a firewall issue. See Firewall Issues.
 - If a credentials prompt appears, enter the necessary credentials. If the credentials are valid, ensure that these are the credentials used in the Local Agent Management interface.
 - b. Look for the file called "Local Print Agent.MSI" or "PFLocalAgent.MSI".
2. Does the installer execute?

If any of the following general error messages are received, see Firewall Issues.

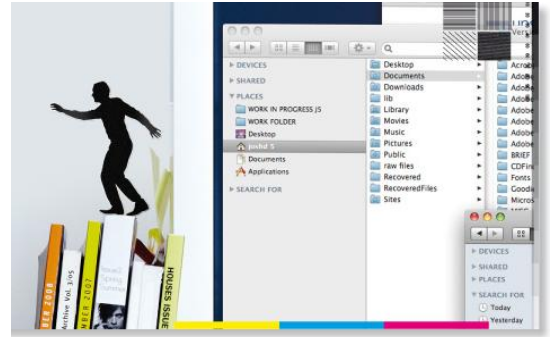
 - a. Could not copy file to remote machine.
 - b. Could not apply credentials to the remote machine.

If the following error message is received, see WMI Install Issues.

 - a. Could not connect to the remote computer's WMI namespace.

The following messages are related to registry installs, see Registry Install Issues.

 - a. Install will be completed upon machine restart.
 - b. Could not create registry entry on the target machine.
 - c. Could not connect to the remote registry.
3. Is the application running?
 - a. Check the running services on the remote machine (Start->Control Panel->Administrative Tools->Services) and look for "Local Print Agent" with a status of Running.
 - i. If not, check the LPA log files (default path: "C:\Program Files\Local Print Agent\Local Print Agent_Logs") for any error information.
 - ii. Check the Event Viewer (Start->Control Panel->Administrative Tools->Event Viewer) for error/install/execution information. See MSI error codes.
 - b. Check that the proper firewall rules were created, see Firewall Issues.



WMI INSTALL ISSUES

Generally, WMI Installs fail for the following reasons:

1. The remote machine's Windows Management Instrumentation service is not started.
 - To start the service, navigate to Start->Control Panel->Administrative Tools->Services on the remote machine.
 - Locate Windows Management Instrumentation in the list of services.
 - Right click it and select start.
2. The user's credentials are not sufficient to perform the required operations on the remote machine (i.e an administrative task).
 - Be sure the user is a local administrator on the remote system. Domain Administrator and Local Administrator are different roles; If a user is a domain admin, they may not necessarily be a local administrator on all of the workstations in the domain. Being a domain admin is not always required, although highly recommended.
3. A firewall is blocking the DCA machine's WMI service from accessing the remote WMI service.
 - Check that the remote machine does not have a firewall enabled. If they do, disable it and try the install again.
4. UAC is not allowing the WMI provider to execute the installer once it is copied.
 - This is a known issue. Check that UAC is turned off on the remote machine.
5. The firewall could not be properly configured to allow LPA to communicate through it.
 - Check that the proper firewall exceptions were added to allow the DCA and LPA to communicate. Port 35 over TCP and UDP should both have exceptions called PFLAUDP and PFLATCP.



REGISTRY INSTALL ISSUES

Registry installs are the secondary method for push installs. If the Local Agent Management utility is not able to install Local Print Agent using Windows Management Instrumentation (WMI), it uses its secondary install method (the Windows registry) to install the Local Print Agent. In this case, you may experience the following:

1. The message "Install will be completed upon machine restart" appears.
 - Be sure the remote machine has been restarted.
 - Ensure the service is running by checking the Task Manager for "Local Print Agent.exe".
 - If it isn't started, see general troubleshooting.
2. The remote machine's Remote Registry service is not started (It's disabled by default in Windows Vista/7).
 - To start the service, navigate to Start->Control Panel->Administrative Tools->Services on the remote machine.
 - Locate Remote Registry in the list of services.
 - Right click it and select start.
3. The user's credentials are not sufficient enough to perform the required operations on the remote machine (i.e an administrative task).
 - Be sure the user is a local administrator on the remote system. Domain Administrator and Local Administrator are different roles; If a user is a domain admin, they may not necessarily be a local administrator on all of the workstations in the domain. Being a domain admin is not always required, although highly recommended.

FIREWALL ISSUES

If a firewall is suspected to be the cause of push install issues, the following steps can be taken:

1. Disable the firewall.
 - Firewalls often do not allow the DCA push installer to copy the install file from itself to the remote machine. Disabling the firewall is occasionally not a viable long-term solution, but may help to diagnose the problem.
2. Be sure the firewall's ports are configured properly.
 - Once the LPA is installed, it will communicate with the DCA via TCP/UDP on port 35. Be sure the firewall has both of these exceptions in its exception list.

GENERAL PUSH INSTALL ISSUES

1. The service will not start even when manually started in the services window.
 - Check the day's log file for the Local Agent, found in "C:\Program Files\Local Print Agent\Local Print Agent_Logs" for any error information.
 - Check the Windows Event Viewer (Start->Control Panel->Administrative Tools->Event Viewer) for error information pertaining to the below MSI Error Codes section.
 - Disable UAC on the remote machine.
2. The service will start but will not communicate with the DCA.
 - See Firewall Issues.



MSI ERROR CODES

The following is a list of error messages that may be returned in the event viewer should the install fail at the Windows level:

ERROR	RESPONSE
Error 20: Could not connect to the remote computer's WMI namespace.	Ensure you have administrator-level credentials on the target machine. This could also mean that WMI may not be installed or a firewall may be blocking connections from your DCA.
Error 21: Could not copy file to remote machine.	Ensure the remote machine is turned on and logged in. Ensure you have administrator-level credentials on the target machine. Also see Firewall Issues.
Error 22: Install will be completed upon machine restart.	Local Print Agent will be installed once the target machine has been rebooted.
Error 23: Could not create registry entry on the target machine.	Do you have administrator rights on the remote machine?
Error 24: Could not apply credentials to the remote machine.	Ensure you are using a Domain Administrator account to push the software, and that the account is a local administrator on the target machine.
Error 25: Could not connect to the remote registry.	Ensure the remote registry service is running on the target machine. It is disabled by default on Windows Vista-based systems. Also see Firewall Issues.
Error 1601: The windows installer service could not be accessed.	Verify that the Windows installer service is installed.
Error 1602: A user on the remote machine canceled the installation.	Ensure the installation is allowed to complete on the remote machine.
Error 1603: Install failed: Ensure .Net Framework 2.0 is installed, and that you have sufficient privileges.	Install .Net Framework 2.0 on the target machine.
Error 1604: The installation is suspended and has not been completed.	Ensure the installation is allowed to complete on the remote machine. Reboot the target machine.
Error 1612: The installation package for the service was unavailable.	The MSI may have been deleted by the user, or may have been deleted when the system was restart after a registry install. You should also verify that you have administrative privileges.
Error 1613: The MSI file can not be installed with the current version of Windows Installer.	A Windows service pack must be downloaded to update the Windows Installer service.
Error 1618: Another installation is already in progress on the remote system.	Ensure only one installation is running at a time.
Error 1623: The language of the remote system is not compatible with the installer package.	Ensure the remote system is using the same language as the installer package.
Error 1625: A policy on the remote system is preventing the install.	Ensure the user has the right to install the software.
Error 1631: The Windows installer service failed to start.	Contact your IT staff.
Error 1638: Another version of this product is currently installed.	Ensure there isn't already an install of Local Print Agent on the target machine.



NOT FINDING DEVICES

If there is a local device that isn't appearing after installation:

1. Identify the IP address of the machine with a local device attached that isn't reporting.
2. Ensure that the machine that is attached to the local device is part of the domain, and the domain administrator account has access to log in.
3. On the machine that the Printer DCA is installed on, open the Printer DCA and ensure that on the Scan tab the Local Devices box is checked.
4. Navigate to Tools, open the Local Agent Management, and perform a scan on the network to identify the locations where the Local Print Agent has been loaded. Ensure that the IP address of the machine is listed here as installed.

If the IP address of the machine is not listed as installed:

1. Select that IP address and attempt the installation again remotely. Optionally you can take the install file from the Printer DCA support folder and manually load the Local Print Agent.
2. If you've installed a few Local Print Agents and they aren't showing up in the Local Agent Management screen when you scan, it's generally best to look on the local system at the log files for the agent. They are located in "Program Files\Local Print Agent\Local Print Agent_Logs". If the agent is failing, there should be some technical troubleshooting information in there that will be useful for tech support.

If the IP address of the machine is listed as installed:

1. Adjust the Local Agent Timeout setting on the Scan tab to 15000ms.
2. Ensure that the Local Print Agent service is running on the machine with the locally attached device.
3. Check that UDP port 35 is open for communication.
4. Check to see if it's using the HP Universal Print Driver. Unfortunately that driver doesn't support the collection method we're using and a model-specific driver will need to be used if available.
5. Right-click an IP with the agent installed and select Get Data. This will force a "test" scan of the selected Local Print Agent. If there are local devices at the target IP, the screen will show "Performing Local Device Scan" and will take a minute or two before returning data in a new window. If there are no devices at the IP, you will see "There are no local devices at this IP" in the messages column.

If using a parallel-connected local device:

- Check that bi-directional communication is enabled at the driver.
- Check that bi-directional communication is enabled in the BIOS of the workstation to which the local device is attached.

