Technical white paper

HP Partner Link
Pay-per-use Portal[1]

Security and privacy white paper

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About this white paper

This white paper describes how the HP Partner Link Pay-per-use Portal collects, sends, and stores data and describes the measures in place to protect your privacy and IT security.

This content is intended for resellers, IT managers, users, or anyone involved in the decision to use the HP Partner Link Pay-per-use Portal.

White paper summary

What information is sent?
The HP Partner Link Pay-per-use Portal sends information related to the printer configuration, printer status, usage and errors data, and information about print jobs. The printer does not send actual job content nor user information and only performs outgoing connections.

How is the information sent and what measures are in place to send it securely?
There are two data collection workflows available and both are equally secure. One of the workflows uses the HP Partner Link Data Collector software and the other uses HP direct connection firmware.[2] There are two differences between these workflows:

• The Data Collector centralizes all the data from all printers in a given local network and sends it to the HP Partner Link Web Service, while the direct connection is used by each printer to send the information

• In addition, the direct connection enables a new generation of service alerts

The information is sent using HTTPS (Hyper Text Transfer Protocol Secure) over Port 443 and the communication is encrypted using 128-bit Advanced Encryption Standard (AES) Cipher Algorithm in Cipher Block Changing (CBC) mode. These measures help ensure that the data cannot be viewed or modified by external applications.

When is the information sent?
The Data Collector workflow sends information every three hours. In the case of the direct connection workflow, the information is sent every three hours, 19 jobs, 100 pages, or whichever happens first. High severity alerts are sent as soon as detected, while device booting happens.

Where is the information stored and which measures are in place to store it securely?
The information is stored in dedicated HP Partner Link Pay-per-use servers, which are encrypted using SSL/TLS (Secure Sockets Layer/Transport Layer Security) with strong encryption algorithms, to help prevent the data from being viewed or modified by an external application.

Both the application itself and the underlying service infrastructure strictly meet HP security standards, and the system is periodically audited.

How much traffic will this imply for my network?
Since the data is compressed, the size of the information that is sent is minimal. The frequency is also low. In most cases, the amount of bandwidth used is less than 0.01% of the total bandwidth provided by a 5 Mbits/sec data connection.

Which port and IP address does this application use?
The information is sent over Port 443 and the printer will connect to different server instances that meet strict security standards. Consequently, the IP addresses to which the printer connects can change dynamically.

What is the HP Partner Link Pay-per-use Portal?

The HP Partner Link Pay-per-use Portal is a software system that supports HP PageWide XL and HP DesignJet printer reseller in selling printers contractually. With the HP Partner Link Pay-per-use Portal, resellers can:

• Access accurate printer usage information that enables them to charge their customers contractually according to the specific agreed upon terms and conditions
• Get information to support the printer(s) operation, enabling an enhanced service offering

Thus, the core functionality of the solution is providing resellers access to detailed printer usage and support information.

The solution has three major components:

• **The HP Partner Link Data Collector** software is installed in a PC in the customer's Local Area Network (LAN); the Data Collector captures the usage data from the different printers participating in the contract(s) managed by the reseller in a particular customer location, and transfers the data to the HP Partner Link Pay-per-use (PPU) Portal
• **The HP direct connection firmware**[2] periodically collects the printer usage data of a given customer and transfers this data to its corresponding account in the HP Partner Link Pay-per-use Portal; when a printer uses the direct connection, it is not necessary for the printer to be connected to a Data Collector
• **The HP Partner Link Pay-per-use Portal** is a web application that stores the usage data captured by the Data Collector Agent and by the HP direct connection firmware, and provides a user interface for the reseller to consult and export the relevant printer usage data needed to charge the customer according to the specific contract terms

Both the HP Partner Link Data Collector and the HP Partner Link Pay-per-use Portal are built on the flexible and highly safeguarded.NET platform that offers excellent performance and scalability.

The HP Partner Link Pay-per-use Portal—a secure application

The HP Partner Link Pay-per-use Portal provides a number of security features including:

• Job content is not sent to the cloud—only information related to the printer configuration, settings, and usage is sent in order to track how much is printed
• The HP Partner Link Pay-per-use Portal application only performs outgoing connections
• The data is sent using Port 443 and is also encrypted using 128-bit Advanced Encryption Standard (AES) Cipher Algorithm in Cipher Block Chaining (CBC) mode; the data is stored in a dedicated server using SSL/TLS (Secure Sockets Layer/Transport Layer Security) with strong encryption algorithms, to help ensure the data cannot be viewed or modified by any third-party application

What information is being captured?

The HP Partner Link Data Collector collects:

• **Printer configuration information,** such as printer model and firmware version
• **Printer status of operation information,** such as status of consumables
• **Printer lifetime usage information,** such as the total amount of ink and paper used
• **Print (and scan and copy, in the case of MFPs) job metadata,** such as the job name, type of job, print quality, media printed, and ink used (note that print or scan job contents are never captured, and consequently jobs cannot be replicated based on the captured data)

The detailed list of data captured is described in Appendix A.

How is information captured?

The HP Partner Link Data Collector accesses the printer(s) information using HTTPS—Hyper Text Transfer Protocol.

The HP Partner Link Data Collector only performs read operations, and it does not update or perform any changes in the printer.

Since the HP Partner Link Data Collector is running on the customer's LAN, there is no need to enable any external access to the customer's network, and the transfer of information from the printer(s) to the HP Partner Link Data Collector cannot be intercepted by third parties.

The HP Partner Link Data Collector configuration controls from which printer(s) data is captured by providing a list of IP addresses or IP address ranges. The HP Partner Link Data Collector only captures data from supported HP PageWide XL and HP DesignJet printers with an IP address that falls in the listed range(s).

The configuration also controls the frequency with which the HP Partner Link Data Collector pulls the data from the printer(s). The default frequency is accessing data every three hours (180 minutes), with a maximum frequency of every 30 minutes.

The HP direct connection firmware internally collects usage data every three hours or every 19 jobs, whichever happens first, and transfers this data to the HP Partner Link Pay-per use Portal.

How is information transferred?

The HP Partner Link Data Collector packages and compresses the information captured from the participating printers and sends it to the HP Partner Link Pay-per-use Portal using HTTPS—Hyper Text Transfer Protocol Secure—over port 443. Thus, the identity of the HP Partner Link Pay-per-use Portal server is verified, and the communication over the Internet between the HP Partner Link Data Collector and the HP Partner Link Pay-per-use Portal server is encrypted using 128-bit Advanced Encryption Standard (AES) Cipher Algorithm in Cipher Block Chaining (CBC) mode, to help ensure that the data cannot be viewed or modified by any third-party application.

The HP direct connection firmware packages the printer usage information and sends it to the HP Partner Link Pay-per-use Portal using HTTPS—Hyper Text Transfer Protocol Secure—over port 443. Thus, the identity of the HP Partner Link Pay-per-use Portal server is verified, and the communication over the Internet between the HP direct connection firmware and the HP Partner Link Pay-per-use Portal server is encrypted using SSL/TLS (Secure Sockets Layer/Transport Layer Security) with strong encryption algorithms, to help ensure that the data cannot be viewed or modified by any third-party application. The HP direct connection firmware authenticates its own identity to the HP Partner Link Pay-per-use Portal using an authentication algorithm that depends on a secret shared between them that is not transmitted over the network, so that accounting data cannot be maliciously reported by any other software.

Since the data transferred is compressed (the order of magnitude of data transferred every instance is less than 100 KB), and the frequency of transfers is low, the network traffic generated by the HP Partner Link Data Collector or the HP direct connection firmware is very low. In the worst case (when the Data Collector is configured to send data at its maximum frequency, every 30 minutes), the amount of bandwidth used would be less than 0.01% of the total bandwidth provided by a 5 Mbits/sec data connection.

In the case that the customer LAN is protected by a firewall, there must be a proxy server configured in the LAN so the HTTPS requests over port 443 can be sent to the HP Partner Link Pay-per-use Portal. The HP Partner Link Data Collector can use the proxy configuration in the Internet preferences of the Windows configuration (i.e. the same proxy configuration used by other applications, such as Internet Explorer, running in the system). Alternately, a set of specific proxy settings can be configured for the HP Partner Link Data Collector, so the traffic can be routed through a dedicated proxy.

How is information stored?

The HP Partner Link Pay-per-use Portal stores the data in dedicated servers. Both the application itself, and the underlying service infrastructure, strictly meet the HP security standards, and the system is periodically audited to help ensure the highest level of data security.

How can you access the information?

The HP Partner Link Pay-per-use Portal allows only the user accounts associated to one specific reseller to access the usage information data for a printer. The reseller that can access the information is configured during the HP Partner Link Data Collector installation by setting the corresponding customer account name. Only the user accounts associated with the reseller owning that user account can access the usage data.

The HP Partner Link Pay-per-use Portal can change the configuration of the HP Partner Link Data Collector but cannot change the configuration of the printer(s), nor perform any action on them.

HP personnel may also access the printer information to perform maintenance and support operations and to get aggregated performance data to fine-tune and improve the system performance.

The details on the data privacy policies can be found at hp.com/Partnerlink.

Appendix A—Printer data captured by the HP Partner Link

Printer configuration information:

- Product number
- Product name
- Serial number
- Firmware version

Printer status information:

- Print engine status
- For each printhead:
  - Printhead color(s)
  - Printhead status
  - Printhead health metric
  - Printhead product number
  - Printhead product name
  - Printhead serial number
  - Whether the printhead has been used with non-HP ink
  - Printhead expiration date

- For each ink cartridge:
  - Cartridge ink color
  - Cartridge status
  - Cartridge product number
  - Cartridge product name
  - Cartridge serial number
  - Cartridge manufacturer
  - Cartridge capacity
  - Cartridge total ink consumed
  - Cartridge total non-HP ink consumed
  - Cartridge expiration date

- For each media source (roll(s), single sheet, input tray(s)):
  - Status (loaded, unloaded,…)
  - Media type loaded
  - Media dimensions (width and height)

- List of all the media types supported by the printer, with localized names
- Job category thresholds
- Print categories customization settings
- Installed accessories status

Printer usage information

- For each ink cartridge type supported by the printer:
  - Cartridge product number
  - Total ink used for all the cartridges of this type
  - Total non-HP ink used for all the cartridges of this type
  - Total HP ink used for all the cartridges of this type
  - Number of insertions of cartridges of this type

- For each media type used in the printer:
  - Media type name
  - Total area used of this media type

- Total area scanned (including scanning and copying)
- Total area scanned actual scans (i.e. no copies)
- Total area scanned for copies
- Application category usage; for each application category:
  - Application category identifier
  - Total media used area for plots of the corresponding application
  - Total media used linear for plots of the corresponding application

- Number of jobs
- Number of pages
- Total ink usage
- Total media usage

Print jobs information

- Job name
- Job UUID
- Job sequence number
- Project ID, Application ID, User Defined, Account ID, User Name, Timestamp: this is a set of information provided by the application submitting the job; when the HP printing driver(s) are used to send the jobs, the User Name and Timestamp are included, and the Account ID may be included depending on the driver configuration
- Printing timestamp
- Job status (printed, cancelled, …)
- Source (driver, RIP, EWS, …)
- Ink coverage category
- Print quality
- Number of pages
- Number of copies
- Total time to print
- For each ink color:
  - Ink used to print the job (including printhead servicing)

- Total media used (area)
- Total area printed

- For each application category:
  - Total media used
  - Total area printed
  - Total ink used
  - Total media length used

- Non-white pixel coverage
- Color pixel coverage

Scan jobs information

- Job name
- Job UUID
- Job sequence number
- Project ID, Application ID, User Defined, Account ID, User Name: this is a set of information provided by the application submitting the job; these are usually NOT filled in the case of scan jobs, but may be filled if an HP front panel application (such as ARC's Abacus application) is used
- Scanning timestamp
- Job status (scanned, cancelled, …)
- Total area scanned

Copy jobs: contain both the scanning and printing information described in the previous sections.

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[1] The HP Partner Link Pay-per-use Portal is currently available for the HP DesignJet T920 Printer series, HP DesignJet T930 Printer series, HP DesignJet T1500 Printer series, HP DesignJet T1530 Printer series, HP DesignJet T2500 Multifunction Printer series, HP DesignJet T2530 Multifunction Printer series, HP DesignJet T3500 Production MFP, HP DesignJet T7100 Printer, HP DesignJet T7200 Production Printer, HP DesignJet Z6200 Photo Production Printer, HP DesignJet Z6600 Production Printer, HP DesignJet Z6800 Photo Production Printer, HP PageWide XL 8000 Printer series, and HP PageWide XL 8000 Blueprinter. The HP Partner Link Pay-per-use Portal will support the HP PageWide XL 4500/4000 and 5000 Printer series and the HP PageWide XL 5000 Blueprinter as of January, 2016.

[2] Information on supported printers can be found in the HP Partner Link Pay-per-use Portal User Guide.

Learn more at
hp.com/go/Partnerlinkhome