White paper

Device Management: Data collection and reporting requirements

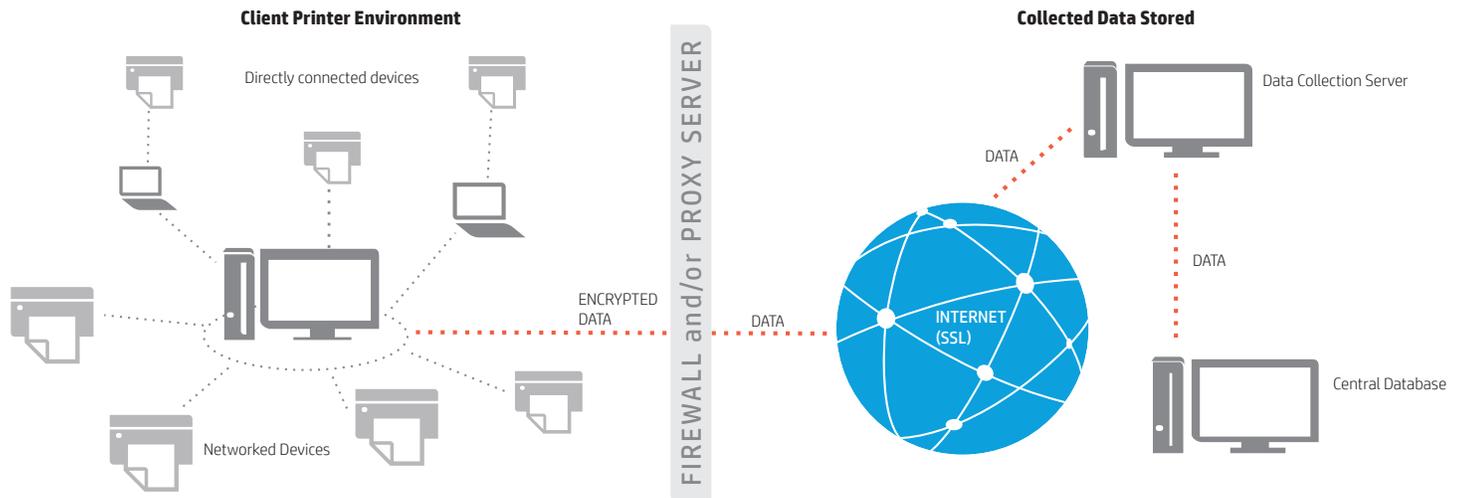## HP Managed Print Specialist - Resell

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During the sales process and management of an HP MPS Resell partner contract, fleet data collection is required. Quotes and proposal generation benefit from an accurate assessment of expected page volume for the devices in the agreement schedule; invoicing and reporting rely on a regular and accurate data feed of fleet usage; and supplies usage/levels are also required for Automatic Toner Replenishment (ATR) where toner orders are generated systematically.

Data Collection for Device Management (overview)

To assist in maintaining accurate and up-to-date device information, it is strongly recommended that data collection tools are installed and remain operational in the customer environment through the term of the contract.

An automated data gathering scenario is reflected below:

Data Collection Process

Client Printer Environment

Directly connected devices

ENCRYPTED DATA

DATA

FIREWALL and/or PROXY SERVER

INTERNET (SSL)

Networked Devices

Collected Data Stored

DATA

Data Collection Server

DATA

Central Database

Data collection tools can automate much of the device and usage information gathering and transfer processes required to manage a fleet. Unfortunately, many legacy devices (generally manufactured before 2005) and newer devices that are more suited for personal use, cannot accurately report device data for invoicing, reporting or ATR. In some cases these devices do not report at all. HP may still choose to support these devices, but where a device does not automatically report required data for MPS management, device data must be collected manually and reported to HP via alternate means.

It is the Partner's responsibility to:

• Gather customer and device information needed to prepare a proposal (devices, expected print volumes, contact and location information).

• Provide regular data feeds to support invoicing, reporting and (if selected) ATR processes.

• Maintain accurate customer contact and device location information for service delivery and supplies shipments.

NOTE : HP will provide support for setup and ongoing maintenance when standard data collection tools (HP UDA and HP DCP) are deployed for remote monitoring.

Data Collection for Quoting

The HP Resell program uses wholesale page rates that are charged on a usage basis. The page rate combines provided services, supplies and parts into a price bundle for each supported engine sold by HP for resale. The page rate is synonymous with cost per page (CPP) or cost per click (CPC). Cost per impression usage is measured using normalized impressions of standard office page sizes (US Letter/8.5" x 11" or A4).

The agreement pricing is based on support for all eligible devices within the organization and accurate reporting of device use. All devices of a similar model/series must be enrolled unless exceptions are granted in writing. Devices can only be removed from the program if they are taken out of service and permanently removed from a supportable location. Additional devices may be added at any time if support and page rates are available.

The final Partner quotation requires proper representation of printer devices, locations and expected volumes across the entire customer fleet and is based on a listing of a page rate per printer engine class for all devices covered by the contract.

Data Collection for Invoicing

To initiate invoicing and the first billing cycle, initial or start page counts must be collected for all devices. This process occurs at account onboarding when the devices on the contract schedule are entitled for service. The device service entitlement process is managed by the HP service operations team so that devices and their page counts are linked to a unique device identification number for ongoing management.

Customer-level invoices are calculated periodically (Monthly/Arrears or Quarterly/Advance, according to the agreement terms), where the actual amount due per period is calculated using engine class page rates and last recorded valid page counts (normalized to standard office media). The invoice calculation uses the schedule of prices secured in each customer agreement and requires accurate reporting of total customer page volume, by engine, and split by color and mono.

Invoicing data feeds are required monthly or quarterly, to align with the selected customer invoicing option and the billing date (negotiated to align with customer invoice dates). If the page counts are not received prior to invoice preparation, the invoice can be calculated using projections based on the most recent actual page counts and reconciled once page counts are received.

Periodic page rate adjustments can be made based on observed device usage or supplies shipments. Fluctuations in use are expected, and frequently will normalize across the fleet; however, a Quarterly Business Review (QBR) would be an opportune time to discuss any wide variances prior to any billing adjustment being made. Considerations can be given to:

• Supplies use outside yield norms.

• Page volumes above/below proposal rates.

• Period adjustments based on over/under billing during the previous cycle for Quarterly/Advance invoices.

For devices that do not report or cannot supply the required usage information, or fleets/device where a data collection tool is not being used to automate the metering process, an alternate process must be used to provide page counts for invoicing. When device data is unavailable or insufficient, devices should not be included in the MPS page contract.

Options for alternate data collection include
- The partner (working with their customer) would regularly print device configuration and usage pages, noting the unique device identification number, and emailing or faxing these pages to the HP operations team for manual data entry.
- On a periodic basis (aligned with the billing cycle) send an MPS representative to the customer site to collect the required counts by printing device configuration and usage pages and providing the data to HP to record. If HP conducts "sweeps" for page counts, reasonable agreement modifications including page rate increases will be applied.

Alternatives to manual data collection include
- Calculation of pages printed using cartridge shipments vs. actual pages printed. This may be an option for locally connected devices.
- Replacing the non-reporting device with a new HP device that performs well in an MPS environment (provides quality information via data collection tools and, likely, offers a lower cost of printing).
- Removing the device from the MPS contract or not placing the device under contract, and using transactional processes for supplies and service requests.

Data Collection for Automatic Toner Replenishment

ATR is an optional capability available in conjunction with HP MPS. This service requires remote monitoring software to regularly report device use and supply status levels over time to determine the estimated days remaining for each toner cartridge. At nine (9) days remaining, the system will automatically generate a supplies request and, according to the service level and geographic location of the device, request shipment and/or delivery of supplies for installation where needed.

ATR requires the following to ensure successful delivery of supplies:

Remote device meter and supply data reporting for 30-days
- The HP Universal Device Agent (UDA) for networked devices and Direct Connect Proxy (DCP) for locally connected devices, or an alternative remote monitoring solution feeding regular updates to the HP universal Data Collection Agent (uDCA), must be installed and reporting supplies levels and page counts on devices added to the MPS agreement.
- 30 days of meter/supply data must be collected before the system has sufficient data to initiate ATR service. For this period, toner service requests can be made via the Service Portal or service request line (as applicable).
- Devices must be online, or in sleep mode, for remote monitoring to occur. Devices must not be powered off or removed from the reporting network. If devices are removed from the network, data collection cycles will be missed and reporting levels will be inaccurate. Devices that stop reporting must be remedied for ATR to perform as expected

Physical shipping address must be accurate and complete
- Accurate and detailed shipping information (including contact names) must be associated with each device/site and recorded in the HP MPS database.

No "open" service requests
- The HP MPS system will not initiate requests for supplies if there is an open ticket for service. This policy alleviates the possibility of the ATR process resulting in a duplicate supplies order. If an open service request exists in locations with local HP service technician coverage, an ATR incident will not be initiated as the technician will address the replenishment need during the service visit. If a service network partner has completed the service request and a need for supplies still exists, supplies replenishment requests are reactivated once the service ticket is closed.

Devices must be able to report all required data accurately
- Many legacy devices (generally manufactured before 2005) cannot accurately report data. The Management Information Base (MIB) for these devices is unable to respond with the required information when requests are sent by monitoring software. Example: The HP LaserJet 4000 series will report data; however the data is not reliable for toner replenishment. This device only reports 100%, 50% or 0% toner used.
- Newer devices, more suited for personal use, may not report required use and/or current supply levels. These devices should be excluded from ATR service.

Unexpected large print jobs may cause outage
- As historical data is used by the ATR process to estimate the number of days before supplies are depleted, unexpected spikes in use or a large print job with significant toner coverage will result in supplies being depleted faster than expected. This use case may result in a request being generated for replacement after toner is depleted.
- In situations when unexpectedly high volumes of toner are used over a short period of time, ATR's predictive "use over time" algorithm will not adjust fast enough, so a safety-net trigger (based on toner levels) is in place to alleviate a possible toner out scenario.

Appendix

Device Reporting Cross Reference

Data Available from DCA	Page Usage Reported Required	Supplies Data Reported Required	Billing Solution	Toner Solution	Examples
Yes	Yes	Yes	Actual device use via Data Collection Agent	ATR[3] w/ Toner Requests Process for Exceptions	Current networked workgroup devices
Yes	Yes	No	Actual device use via Data Collection Agent	Exception Toner Request Process[4]	Legacy networked workgroup devices (e.g., LJ4000)
Yes/No	No	No	Manual Page Counts[1] or Shipped cartridges[2]	Exception Toner Request Process	Legacy personal/ Lower-end devices (e.g., LJ1000)
No	Yes	Yes/No	Manual Page Counts[2]	Exception Toner Request Process	Current workgroup devices not reporting on the network

[1] Manual page counts must be collected periodically and provided to the HP operations team — timing should be aligned with invoice frequency.

[2] The number of shipped cartridges can be used to calculate the pages used on a given printer series over the billing period.

[3] Automatic Toner Replenishment (ATR) requires 30-days to gather usage information before the service starts.

[4] Requests for replacement toner can be made via a service portal website and/or a help desk phone call, as applicable.

Non-Counting Devices

The list below shows devices known to provide insufficient or unreliable usage information for page counts but can still be supported. As a result, these devices must be invoiced using a calculation that converts the yield of cartridges shipped to pages printed during the invoice period. The calculated pages will be reflected on the standard invoice.

HP	HP 1000	HP 1018	HP 1020
	HP P1005	HP P1006	
	HP 4L	HP 5L	HP 6L
	HP OJP 8000/8500	HP OJP 8100/8600	
Brother	Bro MFC 4800	Bro MFC 8480	Bro MFC 8500
	Bro HL 1250-1450		
	Brother HL 5140	Brother HL 5250DN	
	Brother Intellifax 2800	Bro Intellifax 4750	Bro Intellifax 4100

NOTE: This list is subject to change without notice.

Resources, contacts, or additional links

For further guidance on the onboarding process and supported devices, please contact the HP support team or your HP MPS representative.

Additional White Papers

MPS Account Onboarding
• Contains information regarding the coordination between sales and operations related to entitling devices at a customer account for service.

MPS Service Management
• Explains processes for placing service requests and how services are delivered.

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