HP Retail Peripheral Agent Technical User Guide v1.0.0.1

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Introduction

The HP Retail Peripheral Agent is a service that can be used to dynamically and remotely obtain information about retail peripherals attached to retail terminals. HP Retail Peripheral Agent has the capacity to support all 36 UPOS device classes. The main purpose of the HP Retail Peripheral Agent is to function as a mediator between the common information model (CIM) Object Manager and the managed point-of-sale (POS) units. Information gathered by the HP Retail Peripheral Agent service will be stored locally in encrypted format, which can be accessed by manageability applications to perform analytics. The HP Retail Peripheral Agent is designed to have a direct path to and is supported by HP DaaS TechPulse (www.hp.com/go/daas) application.

In addition to reporting retail device manageability information, the HP Retail Peripheral Agent provides the following features to enhance the retail experience.

- Preventative strategy: The Retail Peripheral Agent provides the capability to manually set the analytical threshold setting for each retail peripheral and report data to the manageability software for analysis. The goal is to inform the customer of the retail device's usage level (i.e. report the number of hours each retail device has been running throughout the device's life cycle, report the number of receipt printer paper cut count accumulated throughout its life cycle, report good card swipe count from the MSR, etc.) and enable the customer to proactively replace equipment before it fails based on the threshold state.

- Monitor and Alert Options: The HP Retail Peripheral Agent includes additional monitoring features to check for device signals that are known to occur in the retail space. Events such as the USB Cash drawer device getting dropped, the handheld scanner accidentally gets disconnected, etc. In addition, insertion or removal of a USB thumb drive can be monitored and incidents can be reported to specified IT, local staff, etc., via email (SMTP port# 587, alternative SMTP port# 465, default mail server from: rposserver@gmail.com).

Prerequisites

HP Retail Peripheral Agent requires the following:

- Operating System: Windows 10 Pro or Windows 10 IoT
- PC manufactured by Hewlett Packard
- Framework: Microsoft .NET Framework v4.6
- UPOS Drivers: CCO v1.14 and peripherals' OPOS drivers stack support
- Optional Agent: HP DaaS TechPulse (https://www.hpdaas.com/wizard_download) or alternative manageability software

General knowledge of HP Retail Peripherals and UPOS v1.14 specification:

- HP POS Configuration Guide: http://h10032.www1.hp.com/ctg/Manual/c05837004

- UPOS v1.14 specification: https://www.omg.org/retail/unified-pos.htm

Installation and Setup

To install HP Retail Peripheral Agent, perform the following steps:

Run the HP Retail Peripheral Agent Softpaq installer. Follow the GUI to complete the installation process.

Screen 1. Example of initial component description
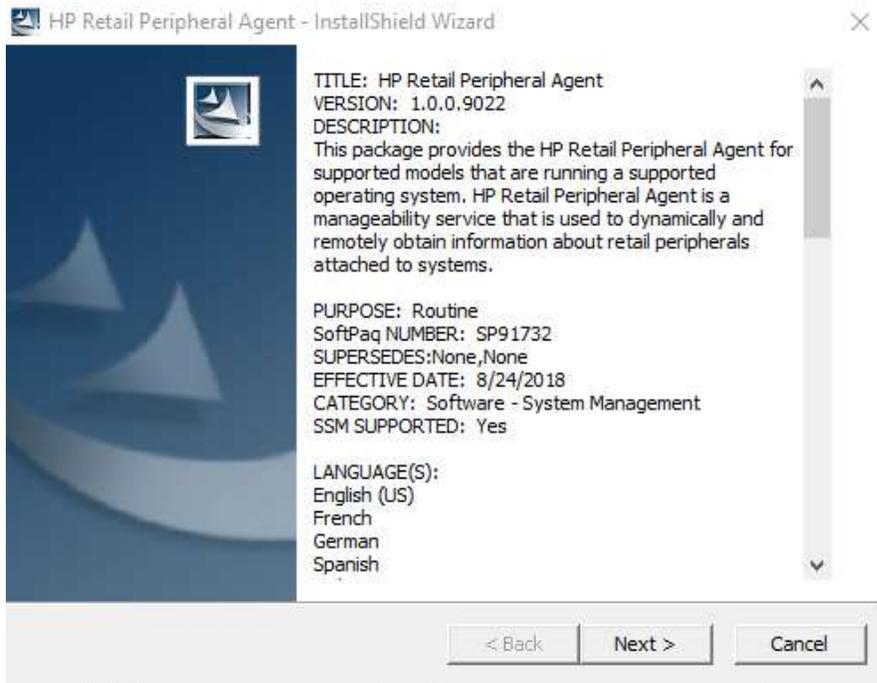
Screen 2. Softpaq EULA
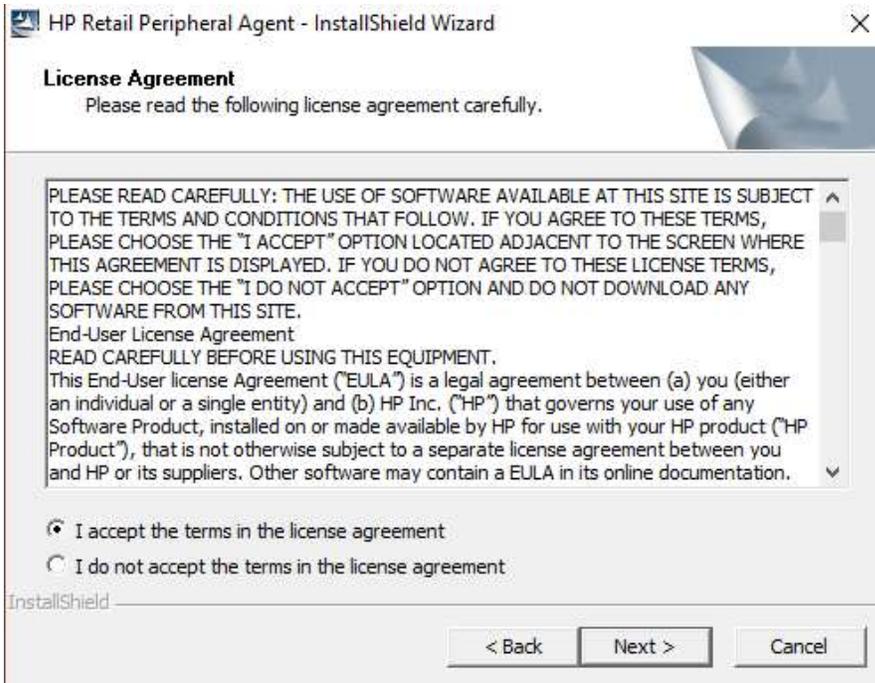
Screen 3. Location where the install package gets installed.
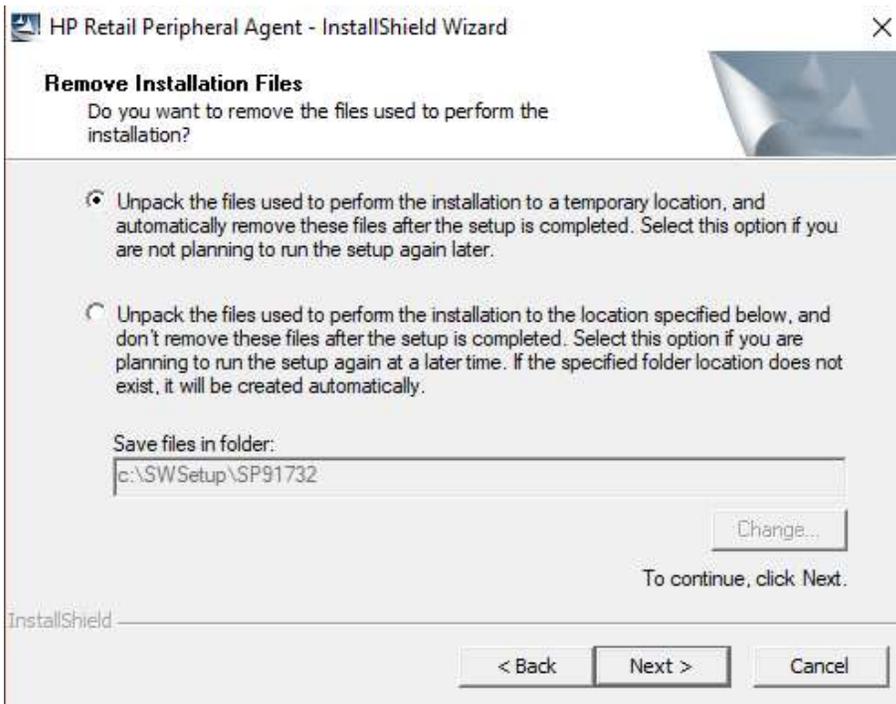
After selecting next, installation will complete and self-close.

To install silently, use HP System Software Manager (http://www8.hp.com/us/en/ads/clientmanagement/overview.html?404m=rt40

[4Mb,cache-ccto0#overview](#)) or run with a silent switch for remote deployment, execute the following command-line string.

      Silent switch: sp9****.exe /s

Upon completion of the installation, the service will start automatically.

    The HP Retail Peripheral Agent file contents are stored at the following path upon a successful install: "C:\Program Files (x86)\HP\HP Retail Peripheral Agent".

    You can check the status of the HP Retail Peripheral Agent service by entering the following command-line:

    -   sc query "HP RPOS Agent Service"

    If the command returns a "run" status, then the service is active and in a working state. If in the command returns "stop", then the service is not running. If the service is in stop status, please check the event viewer for any error code.

    Similarly, if you are using the HP TechPulse service, you can check its status by running the following command:

    -   sc query "HPTouchpointAnalyticsService"

    To configure the Retail Peripheral Agent, navigate to the installation path and run "HP Retail Peripheral Agent Configuration Utility" (RPOSAgentUtility.exe). The following sections within this tool can be custom configured to meet various ISV's environment needs:

- Report Scheduler: This section has the option to set when to collect peripheral data. By default, the time to start collecting device data occurs at 3:00 am (refer to Fig 1 at the "Update Retail Peripheral Agent Report" field). The "Update Retail Peripheral Agent Report" field is changeable and can be edited to meet the desired time whether during store off hours or during certain IDLE periods. Optional settings below:
    - If the polling option is selected/enabled, the service will search for device availability according to the UPOS exclusive use specification and if all devices are available, it will collect the data for analysis, and if one of the devices is not available, it will check again in the next hour. By the 23rd hour of the day, it will collect data from all peripherals and will return as null values for those peripherals that are still under an exclusive use state. Data can be store locally or be uploaded to the DaaS cloud storage provider.

- o If polling is not selected, and only the "Update RPOS Agent Report" is selected, then at the time set, it will collect data from all peripherals will return null values for those peripherals that are still under exclusive use state.
- o If polling is not selected, and "Report To File" option is selected, then it will collect data from all peripherals will return null values for those peripherals that are still under exclusive use state. Note: with File option enabled, manageability data stores at C:\ProgramData\HP\RetailPeripheralAgent*date&time*.dat.

Fig 1
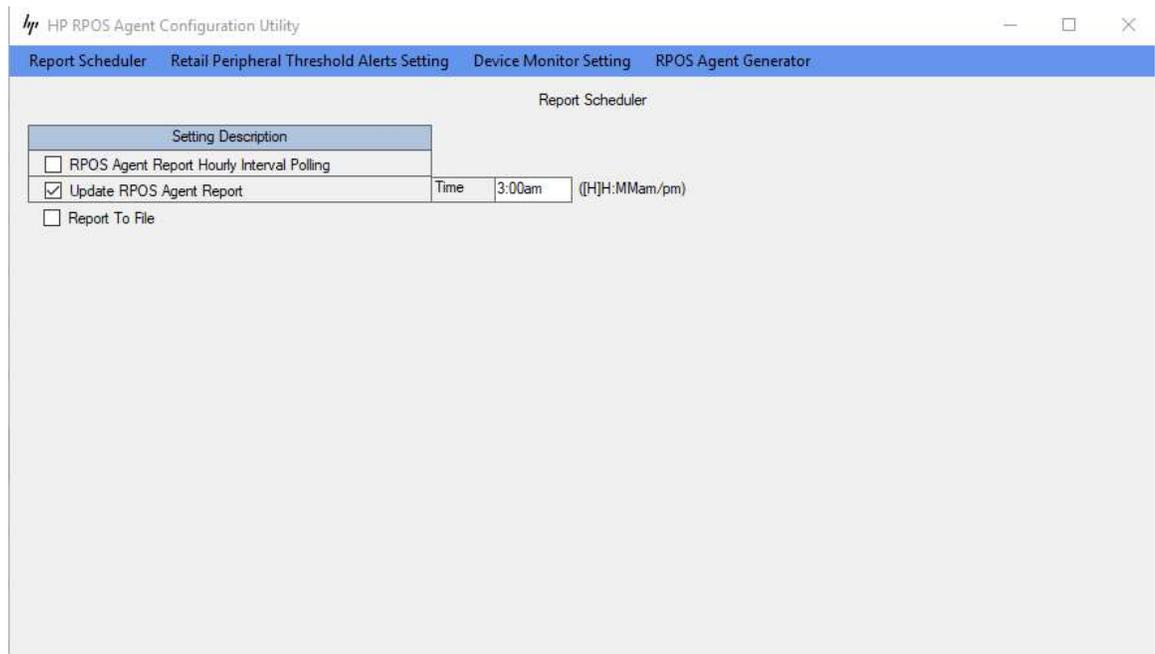
- Retail Peripheral Threshold Alerts Setting: HP Retail Peripheral Agent utilizes the device LDN (Logical Device Name) as the key setting to assign and collect device information. This section allows users the option to use the LDN to assign (add or remove) supported retail peripherals to the management list and custom assign a threshold value to monitor. For HP peripherals, the HP Retail Peripheral Agent Configuration Utility is designed to auto detect the HP peripheral device ID and has logic to assign the device's default LDN (logical device name) to the configuration list. For the device's threshold setting, the value is automatically populated to the configuration list from the Mean Time Between Failure (MTBF) specification. HP Retail Peripheral Agent has the capacity to support all 36 UPOS device classes and up to four same device classes.

For example, in Fig 2, the retail terminal system has the HP H300 receipt printer and two HP scanner device classes installed. By default, the configuration utility will detect the existence of those devices and auto populate the LDN and the threshold setting to the configuration profile. Both the LDN and the threshold field can be edited to the user's desired LDN/Threshold setting, thus those fields/settings can be utilized to support 3rd party retail peripherals or HP peripherals but with a custom LDN name. NOTE: the threshold field should be changed to the user's specification as the default value has been populated only for HP's test demonstration.

Fig 2

HP RPOS Agent Configuration Utility

Report Scheduler   Retail Peripheral Threshold Alerts Setting   Device Monitor Setting   RPOS Agent Generator

Retail Peripheral LDN and Threshold Alerts Setting

RPOS Device Class	LDN-1	LDN-2	LDN-3	LDN-4	Threshold Setting: Operation HRS: 24Hrs * 365Days * 3Yrs	
PinPad					Power Hour Count >	
PointCardRW					Power Hour Count >	
POSKeyboard					Power Hour Count >	
POSPower					Power Hour Count >	
POSPrinter	H300				Power Hour Count >	52600
					Printed Lines Count >	72000000
					Paper Cut Count >	3000000
RemoteOrderDisplay					Power Hour Count >	
RFIDScanner					Power Hour Count >	
Scale					Power Hour Count >	
Scanner	N3680-HP	HPPresentationScann			Power Hour Count >	52600
					Good Scan Count >	500000
SignatureCapture					Power Hour Count >	
SmartCardRW					Power Hour Count >	
ToneIndicator					Power Hour Count >	
Totals					Power Hour Count >	

Refresh

Email Server Account Setting
☐ Assign Threshold Email Alert   ☐ Assign OPOS Error Email Alert
Threshold/OPOS Error Warning Email List:

- Device Monitor Setting: This section has the option to monitor certain USB device connectivity states or any USB device. It has the capability to generate a report when the device(s) get detected and/or when the device(s) get removed. If the terminal supports SMTP, then it has the option to directly notify the user of the event via email.

  For example, in Fig 3, the setting within the "Device Monitor Setting" section has the HP Linear Scanner and the HP Cash Drawer device ID entered to the monitor list. If the device connection accidentally pulls out due to unexpected event or if the device cable length design is outside the USB specification or if the device experiences signal integrity issue, then the HP Retail Peripheral Agent will be able to log the event and send an email notification to the TestUser@_.com member.

Fig 3

HP RPOS Agent Configuration Utility

Report Scheduler | Retail Peripheral Threshold Alerts Setting | Device Monitor Setting | RPOS Agent Generator

Device Monitoring Console Setting (Retail Peripheral Alert for USB Devices)

Setting Description

☐ Report all USB devices upon detection of Device Removal

Filter List (Ignore List)

Device	VID	PID

(Device Name, 03F0, 0123)

☐ Report all USB devices upon detection of Device Insertion

Filter List (Ignore List)

Device	VID	PID

☑ Report specific USB devices upon Device Insertion/Removal Event

Specific Device ID to Monitor

Device	VID	PID
HP Linear Scanner	03F0	0E39
HP Cash Drawer	03F0	0D56

Email Server Account Setting
☑ Assign Email Alert Notification
Critical Warning Email List: TestUser@_.com

Retail Peripheral Agent service - Info

HP Retail Peripheral Agent by default is set to have a delay auto start on bootup. To start the HP Retail Peripheral Agent manually, there are two options below which can be used to control when to start, stop, or check on the status of the service:

Option 1: Using the command console

1. Open a Windows command console by going to [Start] -> [Run] and type: cmd

2. To start the service, type the following in the command console: sc start "HP RPOS Agent Service"

3. To stop the service, type the following in the command console: sc stop "HP RPOS Agent Service"

4. To check for service's status, type the following in command console: sc query "HP RPOS Agent Service"

Option 2: Using Windows native Service tool

1. Go to [Start] -> [Run] -> type -> services.msc

2. To start the service, right-click select on the "HP RPOS Agent Service" service and click on "Start".

3. To stop the service, right-click select on the "HP RPOS Agent Service" service and click on "Stop".

4. To set the service to auto start on boot-up, right-click on the "HP RPOS Agent Service" service and choose "Properties". Under the "General" tab on the next window, there is an option for "Startup type", choose "Automatic" from the drop-down menu. Press "Apply" and "OK" to close the window.

Note: the HP Retail Peripheral Agent requires .Net Framework 4.6 be installed on the system. Older versions of .net Framework may prevent the HP Retail Peripheral Agent from loading. Both the HP Retail Peripheral Agent and HP TechPulse service are designed to delay their start-up to ensure the core dependencies successfully load. Early service control query calls during initial system bootup will return as service stop. Allow time for the delay start to start and if service continues to show as not running, check system event viewer for details.

Refreshing retail device's properties and statistics

The HP Retail Peripheral Agent utilizes the standard UPOS model and specification to collect manageability data. The HP Retail Peripheral Agent is designed to collect retail peripherals' properties and usage statistics once a day. Based on UPOS specification, all exclusive use devices will need to be available to collect UPOS manageability field data. To insure a daily capture of retail peripherals, it is recommended that RPOS software perform the finalization methods for each managed peripheral prior to collecting manageability data. Once the finalization methods are in place, various methods described below, can be used to manually call the Retail Peripheral Agent service to collect data.

By using one of the options below, the service will rescan all the devices that are connected to the system.

- To manually collect the devices' manageability information (generate an encrypted json data file store at " C:\ProgramData\HP\HP Touchpoint Analytics Client\External Apps\Dataclass\HP RPOS") for HP DaaS TechPulse, users can execute the service control option by executing a string via command-line: **sc control "HP RPOS Agent Service" 255** or execute sc control "HP Retail Peripheral Agent Service" 155 for alternative management solution where the content store locally. Note:

to view the data generated from the DaaS portal, HP TechPulse service is required and in operational state. For more information on HP TechPulse, refer external link: www.hp.com/go/daas

- **sc control "HP RPOS Agent Service" 255** command-line string can be inserted during Windows startup menu via batch file or inserted after UPOS finalization methods execute (whether during store shift changes, store closings, or exiting of the retail POS application, etc.).

    a. In cases where the RPOS software takes 24/7 exclusive use of the retail peripheral and/or if RPOS software is unable to process the finalization methods, we recommended to insert the service control call during windows log off. This will allow the HP Retail Peripheral Agent to collect data whenever the following event occurs: PC reboot, PC shutdown, and/or during Windows user log off or for maintenance purpose (windows update, menu update, etc.). During the windows log off process, RPOS software will release exclusive use of retail peripherals allowing HP Retail Peripheral Agent and the DaaS TechPulse service to collect manageability information.

    Instruction to insert at windows log off:
    - Run gpedit.msc
    - Navigate to User Configuration->Windows Setting->Scripts-> Logoff
    - Select "Add" option and include this string as seen in the picture:
    C:\Program Files (x86)\HP\HP Retail Peripheral Agent\DCollect.bat
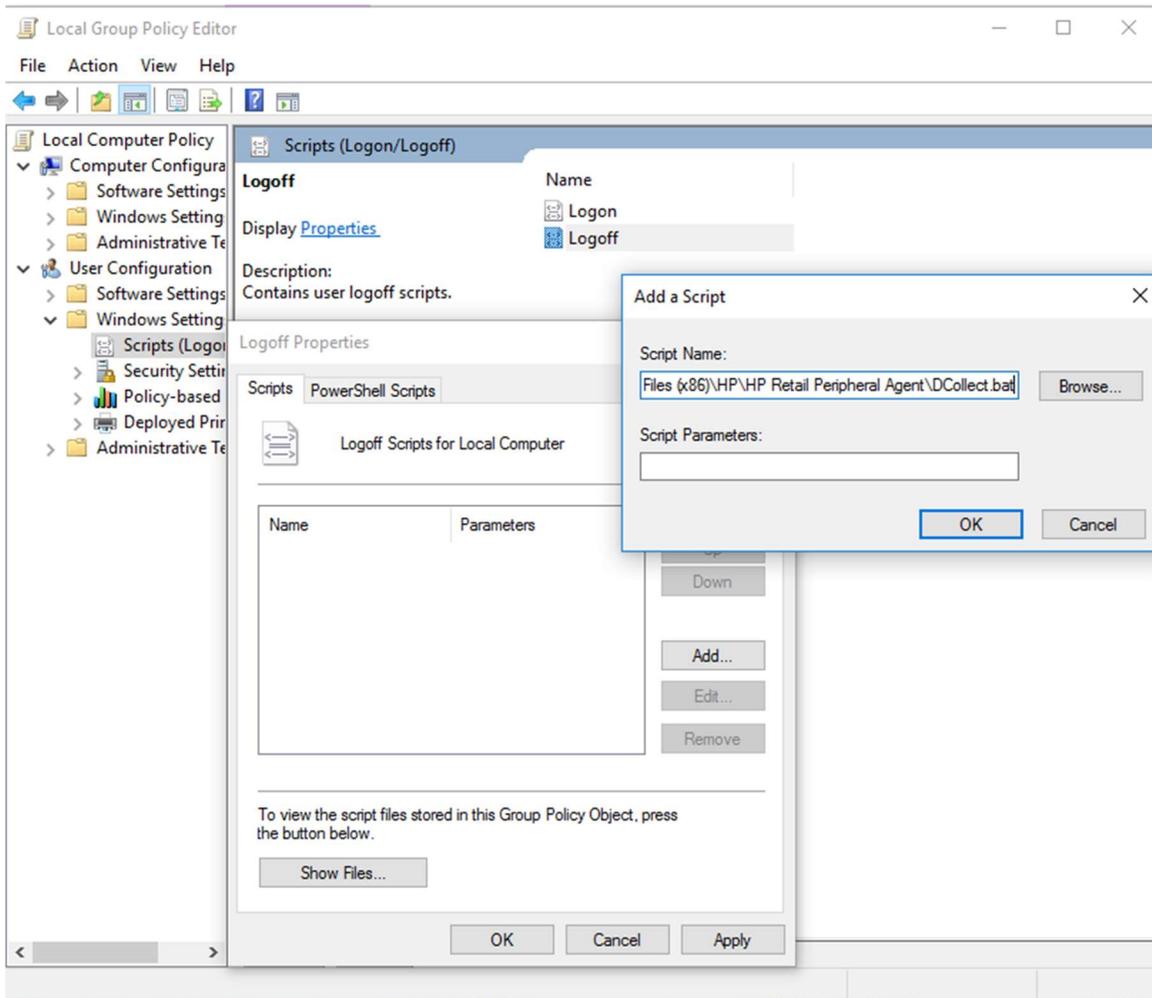
b. In case where the RPOS software has exclusive use procession of the retail peripheral in a dynamic environment, user can configure the HP Retail Peripheral Agent to retrieve the device information at a specific time as shown in Fig4.   Note: To avoid a potential race condition where both RPOS software and HP Retail Peripheral Agent attempt to take control of the retail peripheral at the same time, user must set a time that the terminal has already release control to all managed retail peripherals.

Fig 4
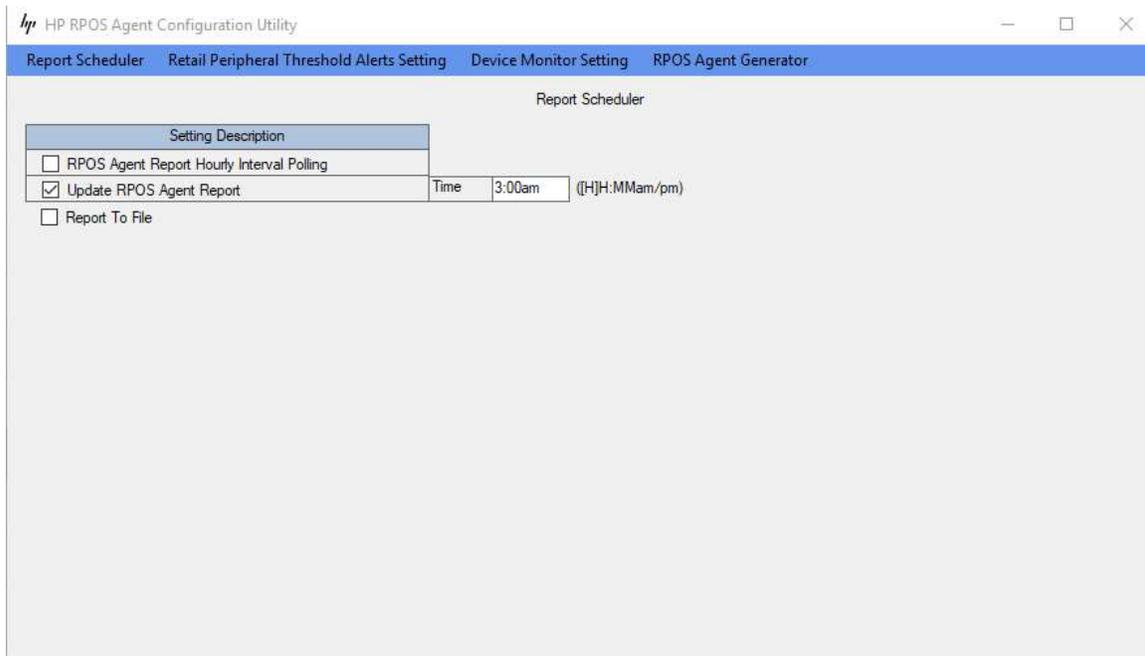
c. With permission of the retail point of sale application provider, for an alternative time driven process to control when to collect data, we recommend using windows "task scheduler" feature to help set a time that will work with retail point of sale application/terminal. To establish this process, the retailer will need to advise when is the best time to schedule the time when the retail point of sale application can close and reopen without interfering with day to day operations. Thorough validation is highly recommended with approval from provider is necessary. Depending on the used application, thread termination of the application can affect the database and will need to be thoroughly validated before proceeding. Once the time is established, you can use command-line process to close the retail point of sale application which will release exclusive use of the peripherals, and then run **sc control "HP RPOS Agent Service" 255** or execute **sc control "HP RPOS Agent Service" 155** to collect peripheral

data. Once data is successfully collected, the customer can add additional command-line logic to relaunch the retail point of sale application to place the application back to initial state and form.   Sample instruction:

- Run Windows Task Scheduler Application: taskschd.msc
- Select option to create a new task
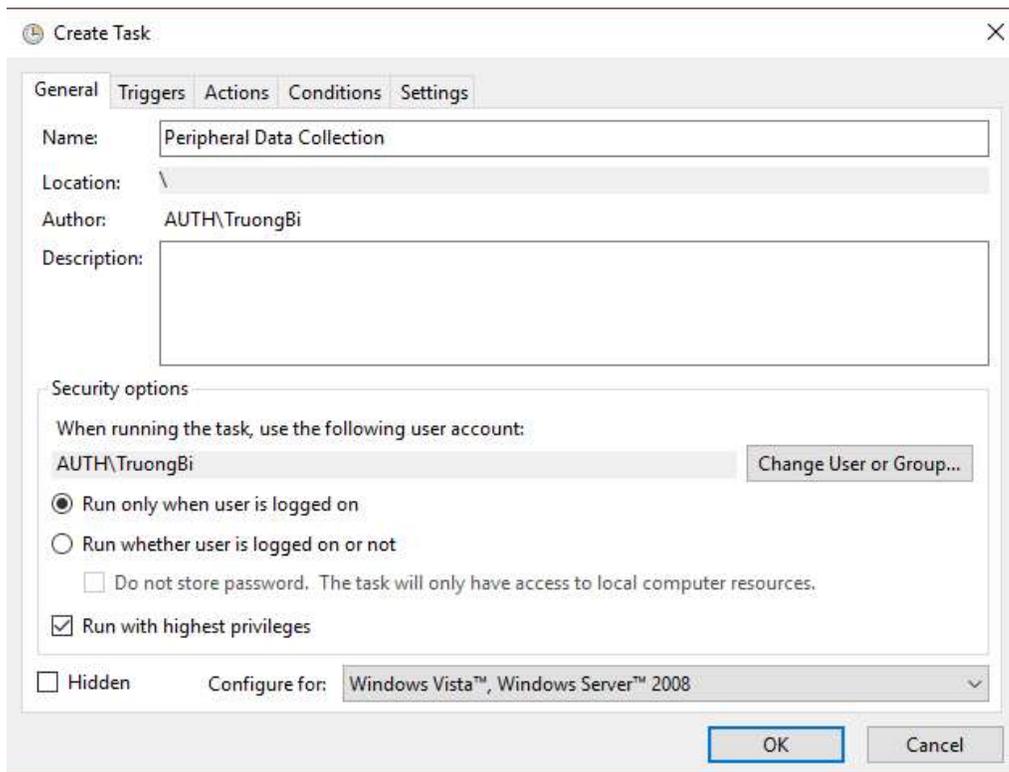
- Setup desire trigger point/date and time to collect
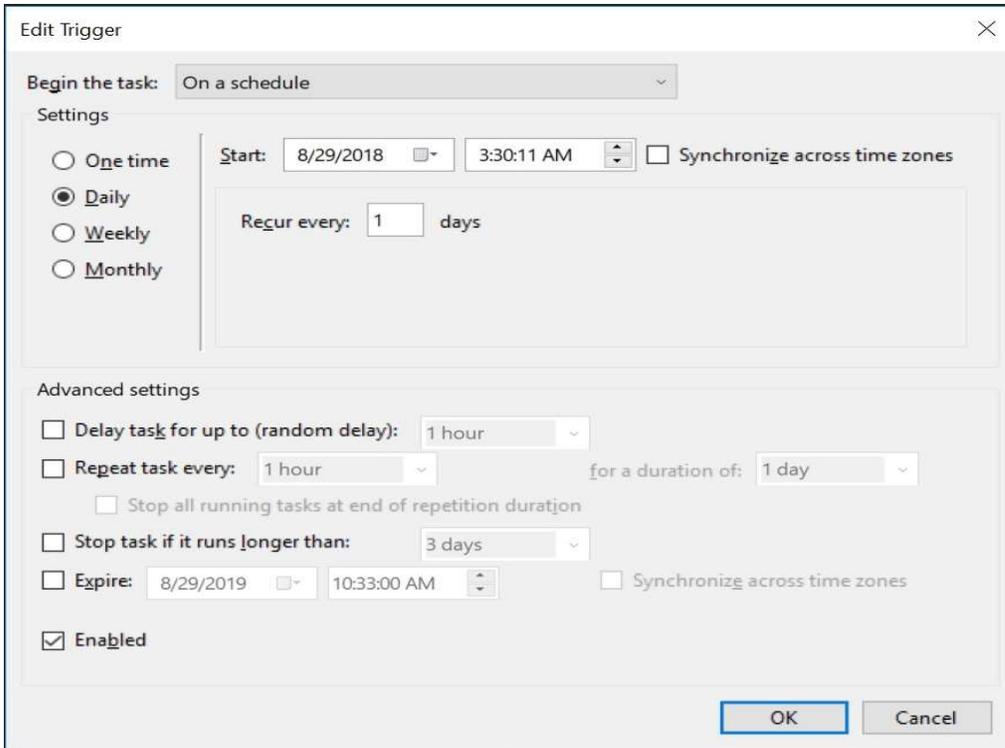
- Set the batch file that will close the retail point of service application and run the data collection command. Refer to the batch file at C:\Program Files (x86)\HP\HP Retail Peripheral Agent\DCollect_Taskcheduler.bat.
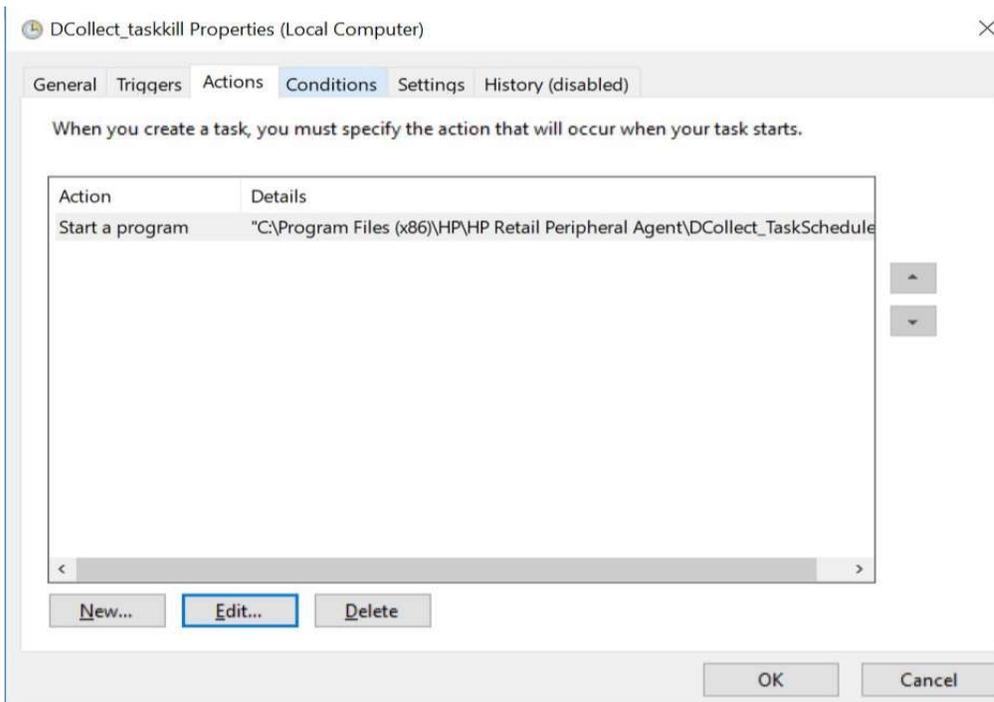
- **sc control "HP RPOS Agent Service" 155.** To manually collect the devices' manageability information (generate data file store at C:\ProgramData\HP\RetailPeripheralAgent*date&time*.dat) for alternative manageability solution, users can execute the service control option by running the following command-line string: sc control "HP RPOS Agent Service" 155. Note: If there is question whether why the peripheral data is not shown at HP DaaS portal, this added feature can be used as a debug step to help determine if the issues is between HP Retail Peripheral Agent or HP DaaS TechPulse side. If file successfully created, and not shown at DaaS portal, then issue is on the HP DaaS TechPulse side. If data file is not generated, then it is an issue locally within the HP Retail Peripheral Agent side. Refer to FAQ section to help troubleshoot.

Manageability Fields

Object POS (OPOS) properties for peripherals will be available upon a successful process of the UPOS initialization method along with a successful return call of the device's retrieve statistics methods and properties. The manageability information chart below is the content HP RPOS gathered for analysis. HP Retail Peripheral Agent supports the common statistics fields (in bold below) for all 36 retail device classes.

DateTime	ISO 8601 truncated representation (local machine time) YYYYMMDDThhmmss
BUSerialNumber	Base unit serial number (wmic bios get serialnumber)
DeviceCategory	Category of the device (36 retail device classes). (UPOS retrieveStatistics method: DeviceCategory)
PeripheralID	HP Peripheral will obtain: revision ID plus Serial number of the peripheral (UPOS retrieveStatistics method: SerialNumber)
	NON-HP peripheral will obtain: Peripheral Serial number from UPOS retrieve command.
LogicalDeviceName	Reports the logical name used to claim the device. (UPOS method: LogicalDeviceName)
DeviceControlVersion	Control driver version of the peripheral (UPOS property: DeviceControlVersion)
DeviceControlInstallPath	Control driver installation path. (UPOS property: DeviceControlDescription)

DeviceServiceVersion	Service driver version of the peripheral (UPOS property: DeviceServiceVersion)
DeviceServiceIntallPath	Service driver installation path. (UPOS property: DeviceServiceDescription)
DeviceCoreDriver	HP Peripheral Return: yes installed, or missing core driver stack.
	Non-HP peripheral return Null
HPHWMode	Current HW interface (data field for only for HP peripherals). Non-HP peripheral return Null
FirmwareRevision	Device firmware version string of the peripheral if exist/program in the FW (UPOS retrieveStatistics method: FirmwareRevision)
ManufacturerName	Device manufacturer name string of the peripheral if exist/program in the FW (UPOS retrieveStatistics method: ManufacturerName)
	HP Peripheral will return Null
ModelName	Device model name string of the peripheral if exist/program in the FW (UPOS retrieveStatistics method: ModelName)
	HP Peripheral will return Null
ManufactureDate	Device manufacture date string of the peripheral if exist/program in the FW (UPOS retrieveStatistics method: ManufactureDate)
DeviceName	HP peripheral: An identifier for the physical device.
	HP Peripheral: This field replace Model/Manufacture field; logic if HP device (base on device ID) then map to a HP Marketing name
	Non-HP devices we pull the following information UPOS retrieveStatistics method: PhysicalDeviceDescription)
CheckHealthStatusResultCode	Reports result code after performing the internal check health of the device on device connection.
CheckHealthStatusResultCodeExtended	Reports result code extended after performing the internal check health of the device on device connection.
HoursPoweredCount	Number of hours powered on.
PaperCutCount	
	Number of paper cuts.
ReceiptLinePrintedCount	Number of receipt lines printed.
GoodScanCount	Number of successful scans.
GoodReadCount	
	Number of successful reads.
ThresholdPowerHourCount	Contain threshold setting if set for number of PowerHourCount for all UPOS device classes
ThresholdPrintedLinesCount	Contain threshold setting if set for number of PaperLinesCount for POSPrinter and FiscalPrinter device classes
ThresholdPaperCutCount	Contain threshold setting if set for number of PaperCutCount for POSPrinter and FiscalPrinter device classes
ThresholdGoodScanCount	Contain threshold setting if set for number of GoodScanCount for Scanner device class
ThresholdGoodReadCount	Contain threshold setting if set for number of GoodReadCount for MSR, MICR, ImageScanner device classes

Note: The additional fields for the following device classes are not covered in this release.

UnifiedPOS Device Programmatic Names (V.1.14.1)	Other Unique field for future consideration
Biometrics	SuccessfulMatchCount UnsuccessfulMatchCount
CashDrawer	DrawerGoodOpenCount DrawerFailedOpenCount
ElectronicJournal	WriteCount FailedWriteCount
ImageScanner	SessionCount FailedReadCount
Keylock	LockPositionChangeCount
LineDisplay	OnlineTransitionCount
MICR	FailedReadCount
MotionSensor	MotionEventCount
MSR	FailedReadCount
PINPad	ValidPINEntryCount InvalidPINEntryCount
POSKeyboard	KeyPressedCount
POSPrinter	
Scale	GoodWeightReadCount
Scanner	SessionCount
SignatureCapture	FailedSignatureReadCount GoodSignatureReadCount
ToneIndicator	ToneSoundedCount

HP's Current Device Support List

To support retail manageability data, the device driver and device FW will need to be designed to support the UPOS manageability model. The following devices in the chart have been confirmed to support the UPOS Manageability data. Note:

Even though these devices are on the supported list, the mode of operation will need to be supported as well. For example: If the bar code scanner is programmed in "Keyboard mode", then the UPOS driver stack will not be able to access the device's FW for UPOS manageability data.

Device Name	Logical Device Name (LDN)	Part Number	Comments
Barcode Scanner - Note: Does not support in Keyboard mode			
HP Engage Go Mobile System Barcode Scanner	N660X-HP	N/A	Requires driver version 1.14.0.18 or later
HP Engage One 2D Barcode Scanner	N3680-HP	1RL97AA	
HP Engage One W 2D Barcode Scanner	N3680-HP	3GS20AA	
HP Imaging Barcode Scanner	HPImagerScanner	BW868AA / BW868AT	
HP Linear Barcode Scanner	HPLinearScanner	QY405AA / QY405AT	
HP Linear Barcode Scanner II	HPLinearScanner	Z1Z36AA	
HP Presentation Barcode Scanner	HPPresentationScanner	QY439AA / QY439AT	
HP Retail Integrated Barcode Scanner	HPIntegratedImaging BarcodeScanner	E1L07AA / E1L07AT	
HP RP9 Integrated Bar Code Scanner-Bottom	HPIntegratedSLImgScn	N3R60AA	
HP RP9 Integrated Bar Code Scanner-Side	HPIntegratedSLImgScn	N3R61AA / N3R61AT	
HP Value 2D Wireless Scanner	HPQSWirelessScanner	K3L28AA / K3L28AT	
HP Wireless Barcode Scanner	HPWirelessBTScanner	E6P34AA / E6P34AT	
Cash Drawer			
HP Flip Top Cash Drawer		BW867AA / BW867AT	RJ12 Cash Drawer managability support depending on the host.
HP Heavy Duty Cash Drawer		FK182AA / FK182AT	
HP Standard Duty Cash Drawer		QT457AA / QT457AT	
HP Value Cash Drawer		4AK35AA	
Line Display			
HP Engage One Top Mount 2x20 CFD	HPTD620Display	1RL95AA	
HP Engage One W Top Mount 2x20 CFD	HPTD620Display	3GS18AA	
HP Retail Integrated 2x20 Complex	HPLCM960Display	G7G29AA	FW 1.65.10 or greater required.
HP RP9 2x20 LCD Top Mount without Arm	HPLM940Display	X3K01AA	
HP RP9 Integrated 2x20 Display BTM w/Arm	HPLM940Display	N3R58AA	
HP RP9 Integrated 2x20 Display Top w/Arm	HPLM940Display	P5A55AA / P5A55AT	
MSR			
HP Engage Go Mobile System MSR	HPSinglenoSRDMSR	N/A	Driver stack before v3.29 requires ISV to design with elevated
HP Engage One MSR	HPSinglenoSRDMSR	N/A	
HP Retail Integrated Dual-Head Magnetic Stripe Reader	HPUSBDualMSR HPUSBDualEncryptMSR	QZ673AA / QZ673AT	
HP Retail Jacket for ElitePad MSR	HPUSBShecMSR	E6R78AA / E6R78AT	

HP Retail Jacket for ElitePad with Battery MSR	HPUSBShecMSR	E6R79AA / E6R79AT	privelege or run in admin right
HP RP2 Integrated Single Head MSR w/o SRED	HPSinglenoSRDMSR	J1A33AA / J1A33AT	
HP RP7 Single Head Magnetic Stripe Reader w/o SRED	HPSinglenoSRDMSR	K1K15AA / K1K15AT	
HP RP9 Integrated Dual-Head MSR	HPUSBDualMSR HPUSBDualEncryptMSR	Y3U27AA	
HP RP9 Integrated Single-Head MSR	HPSinglenoSRDMSR	N3R63AA	
HP USB Mini Magnetic Stripe Reader with Brackets	HPUSBMiniMSR	FK186AA / FK186AT	
POS Printer			
Epson H2000 PUSB Printer	TM-H2000U	K3L29AA / K3L29AT	
Epson TM 2000 Printer	TM-2000	K3L299AA / K3L299AT	
Epson TM-88V PUSB Printer	TM-T88VU	E1Q93AA / E1Q93AT	
Epson TM-88V Serial/USB Printer	TM-T88V	D9Z52AA / D9Z52AT	
Epson TM-88VI Serial Ethernet Printer	TM-T88VI	2HV26AA	
Epson TM-88VI Serial Ethernet USB Printer	TM-T88VIU	2HV25AA	
Epson TM-H600IV PUSB Printer	TM-H6000IVU	D9Z51AA / D9Z51AT	
Epson TM-M30 Printer	TM-m30U	2HV27AA	
HP Dual Serial USB Thermal Receipt Printer	A799	BM476AA / BM476AT	
HP Engage One Column Printer	H300	N/A	
HP Engage One Serial/USB Thermal Printer	H300	1RL96AA / 1RL96AT	
HP Engage One W Serial USB Thermal Printer	H300	3GS19AA	
HP Hybrid POS Printer with MICR II	A776	X3D36AA / X3D36AT	
HP Hybrid Thermal Printer with MICR	A776	FK184AA / FK184AT	
HP LAN Thermal Receipt Printer	A799	M2D54AA	
HP PUSB Thermal Receipt Printer	A799	FK224AA / FK224AT	
HP USB Receipt Printer	A794	EY023AA	
HP Value PUSB Receipt Printer	A798	F7M67AA / F7M67AT	
HP Value Serial USB Receipt Printer	A798	F7M66AA / F7M66AT	
HP Value Serial/USB Receipt Printer II	A798	X3B46AA / X3B46AT	

Known Behaviors

1) If an application has exclusive use to the peripheral OPOS driver before the Retail Peripheral Agent has a chance to extract information, the properties for the peripheral will not be able to be retrieved. The OPOS and service driver for the peripheral needs to be released and a reboot, reinsertion of the device, or refresh command needs to occur for the information to be updated. This is expected behavior per the current implementation of the UPOS specification.

2) If a peripheral has been configured by the HP Retail Peripheral Agent, the setting will still appear in the configuration list if the user removes the device at a later point in time. The removed peripheral's LND will remain in the LND field even after clicking on the "Refresh" button in the Retail Peripheral Threshold Alerts Setting. Once device has been configured, the HP Retail Peripheral Agent will be set in manual mode. User will need to delete the peripheral's LND in the LND field to update the configuration list.

3) Each peripheral can be programmed/set to operate in different communication modes (single or bi-directional). If a device supports the UPOS manageability model but operates in the communication mode that does not support the UPOS manageability mode (i.e. Keyboard mode where there is no OPOS driver support), the HP Retail Peripheral Agent will not be able to generate manageability data. If the device is in bi-directional mode and does not have UPOS driver stack support, the HP Retail Peripheral Agent will not be able to generate manageability data. To meet the prerequisite, the device must be in a mode of communication that can support the UPOS driver stack.

   For example, certain USB scanner models can be set to the following communication mode of operation:

   - Com mode (virtual USB to com protocol): this operates in bi-directional mode where it requires the UPOS driver stack to communicate or a direct connection (ie using HyperTerminal) to the serial protocol to take exclusive use of the device. Note: not all UPOS driver stack supports this mode; refer to device supplier for support information.
   - HID mode: this operates in bi-directional mode where it requires the UPOS driver stack to communicate. Note: not all UPOS driver stack supports this mode; refer to device supplier for support information.
   - Keyboard mode: this operates in a single direction mode of communication where software can take input from the device FW but unable to write to the device FW. Due to the single direction communicating mode, most peripherals in this mode of communication

cannot be used to increment usage data such as number of good scan, power hour usage, etc. where data is typically stored in the FW.

- Composite mode: this mode of communication combines the feature of both HID mode and Keyboard mode in one. Note: not all UPOS driver stack supports this mode; refer to device supplier for support information.

4) Stale properties data will be presented in the database when an unsuccessful claim or removal of the device has occurred during an attempt to refresh the data. For up to date data, refer to "Refreshing retail device's properties and statistics" section within this document above.

- For devices that utilize the device FW to store manageability data, some fields may have a delay in reflecting the counter to prevent constant write to the device FW register. Please refer to supplier if encounter this behavior for precise information. For example, certain device takes 1 hour of up time to before write to the counter register and do not have logic in place to constantly write to the device FW in real time.

FAQ

What questions should be asked and/or information collected upon installing HP Retail Peripheral Agent?

Does the peripherals and ISV model meet the perquisites? For Example:

Do the peripheral(s) in use support the UPOS manageability model?

Does the ISV solution operate under the supported OS environment?

Can the retail terminal have internet port 80 & 443 available to support HP DaaS solution to each terminal?

Is the ISV solution compatible with .net Framework v4.6 or later?

If all the answers are yes, then move to the next set of questions. If no, then this solution may not be compatible with the deployed environment.

What are the list of peripherals that the customer wants the HP Retail Peripheral Agent to monitor?

What is the assigned LDN (logical device name) for each peripheral?

Is there a timeframe in the day that the retail terminal software not take exclusive use of the retail peripherals for about 30seconds or longer?

- Determine this time and configure the HP Retail Peripheral Agent to set the available time to collect the peripheral data.

- If the ISV logic design to take 24/7 access of all peripheral, then refer to **Refreshing retail device's properties and statistics** section in this document.

Are there any limitations on the 3rd-party peripherals?

If the retail device is compliant with the UPOS manageability portion of the specification, it should be compatible with the HP Retail Peripheral Agent.

Is HP DaaS TechPulse required to use the HP Retail Peripheral Agent?

No. The HP Retail Peripheral Agent can be used either stand alone or with other manageability applications.

Does the user have any control on when the system would run the daily capture of the retail peripherals' statistics data?

User can use the configuration utility to change the start time. Currently this defaults to 3:00 am. The start time can change to meet the RPOS software's preferred timing to retrieve the information.

How long does it take to run the daily capture of retail peripherals?

It depends on the number of managed peripheral(s) that need to be configured. It takes on average about 2-4 seconds for most peripherals and about 5-9 seconds for receipt printers. The time variance is based on the peripheral's primary protocol to communicate to the device FW and the amount of data to fetch. For example, if the device is a serial device and on 9600 baud rates or lower, there will be a longer delay retrieving the information versus a device that is on USB HID high bus speed.

How do you make sure the peripheral's data has been collected?

The HP DaaS TechPulse collects the devices' manageability information at " C:\ProgramData\HP\HP Touchpoint Analytics Client\External Apps\Metadata\HP RPOS" location. Local file generated option store at C:\ProgramData\HP\RetailPeripheralAgent*date&time*.dat. Upon a manual trigger or based on a time interval trigger of the HP Retail Peripheral Agent, if the json file extension creation matches the time the trigger occurs, that is a sign that the Retail Peripheral Agent has successfully collected the data.

Is there a way to determine whether the retail peripheral is currently under exclusive use by the retail POS application?

One method to confirm is to utilize two OPOS test utilities or RPOS software and an OPOS test utility supplied by the supplier. Both utilities cannot claim an exclusive use peripheral at the same time. Note: not all retail device category is an exclusive use device, refer to the UPOS specification for detail.

Is there a way to determine whether the retail peripheral is not in an operational state and as a result, the HP Retail Peripheral Agent is unable to collect any good data from it?

Check the service for the HP Retail Peripheral Agent and DaaS Analytic and/or Proactive Management and ensure they are in "run" status. If not check the event viewer for error log and add/remove section in the control panel to insure both applications are installed. Command-line to check for service status below:

sc query "HP RPOS Agent Service"

sc query "HPTouchpointAnalyticsService"

Check if the device is physically connected and the correct device core driver (device driver shown in system device manager) is in a good state. Is the test utility for the device functional within the environment in question? If no, then check supplier's driver stack. If yes, then move to a more advance state to debug. Search for debug file within the service driver typically supplied by the device manufacture or work with the ISV to determine whether a debug version of the control layer can be in place to analyze for result.

Can the HP Retail Peripheral Agent work with windows JavaPOS RPOS software?

Yes. Both OPOS and JavaPOS driver stack of the same device class can co-exist under the same Windows OS environment. The HP Retail Peripheral Agent can still use the OPOS driver model to collect manageability data.