



Pcounter for Windows

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0.0.0 - Introduction

This guide is for Pcounter for Windows 2.x, which is Windows server software for recording print usage, administering print queue configuration, reporting against captured print usage, as well as many other features.

Pcounter for Windows 2.x also serves as the master data server backend for all other Pcounter components.

Pcounter for Windows 2.x features include:

- Updates the Pcounter log file with recorded print jobs from the Pcounter enabled print queues in real time.
- Reporting against the Pcounter log file is possible on any Windows computer in the environment using Pcounter Administrator.
- Generate reports on printing activity; by user, group, printer, client code, etc.
- Maintains real time user account balances.
- Separate pricing for color and monochrome/grayscale print jobs.
- Works with multiple/trusted domains.
- Rules based printing for special job processing, based on maximum and minimum byte sizes and/or page counts. Based on the rule criteria, jobs can be deleted, moved to the end of the queue, or moved to another print queue.
- Built in Pcounter banner pages fully integrated and available on all Pcounter controlled print queues.
- Prices are set per printer, can be set configured for each paper size and color usage.
- Print jobs can be rejected or allowed based on paper size.
- Print job pausing at a print queue or job level.
- Configurable popup windows can display after each print jobs at user workstations. Users are prompted to enter a client code, client and matter, username and password, ID#, etc.
- Printing protocols supported: PostScript, PCL, Ricoh RPCS, Canon Bubble Jet, Epson ESC/P, ESC/P2 (inkjet), and ESC/PAGE (laser) printers, including support for TIFF file printing, and more.
- Plotter area accounting available for large format printers. Tracks plot size on PostScript and HPGL/2 plotters.

0.0.1 - Server Requirements

A Pcounter server requirements document can be found at:

http://apps.pcounter.com/docs/Pcounter_System_Requirements.pdf

1.0.0 - Pcounter for Windows Install Change & Upgrade Guide

The Pcounter for Windows - Install Change & Upgrade Guide can be found online at:

http://apps.pcounter.com/docs/pcounter_install_change_upgrade.pdf

This document covers the following topics and more:

- Installation of a new Pcounter 2.x server
- Installation of a new Pcounter 3.x server, including database server configuration
- How to change from Pcounter 2.x to 3.x
- How to upgrade Pcounter 2.88 and older
- How to upgrade Pcounter 2.90 and newer
- Cloning printers
- Inserting registration
- Changing registration

2.0.0 - General Pcounter Information

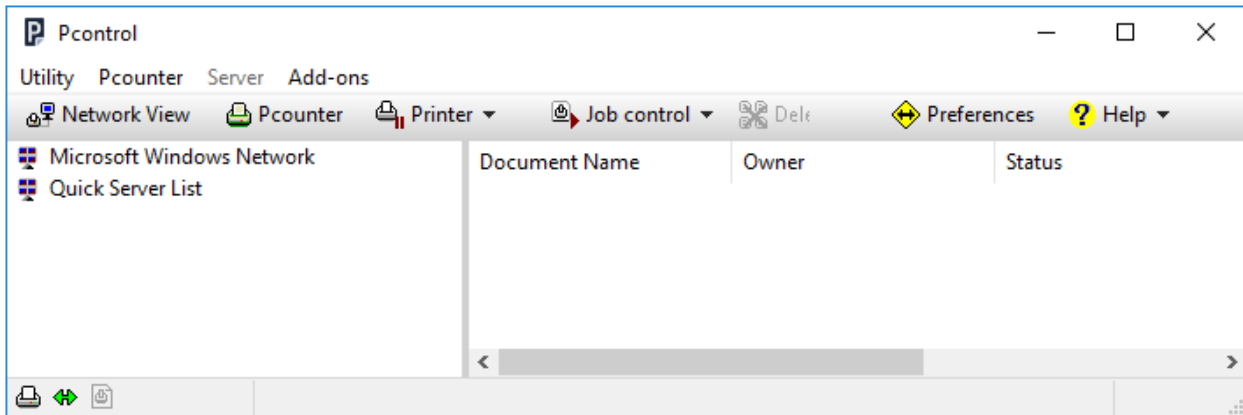
2.1.0 - Pcounter Interface Overview

2.1.1 Pcontrol (PCONTROL.EXE)

Pcontrol is the main server and printer configuration interface for Pcounter. All major Pcounter configuration settings and

Pcontrol is used to manage Pcounter printer prices/rules/policies, Pcounter Popup configuration, Pcounter Data Server configuration, Pcounter Services/Port, Pcounter LPD Server, Pcounter Web Administrator, and more.

Pcontrol can be run on the server or remotely from any workstation with sufficient server access. Pcontrol is intended for IT Administrators only and requires local administrator rights to function.



2.1.2 Pcounter Administrator (PADMIN.EXE)

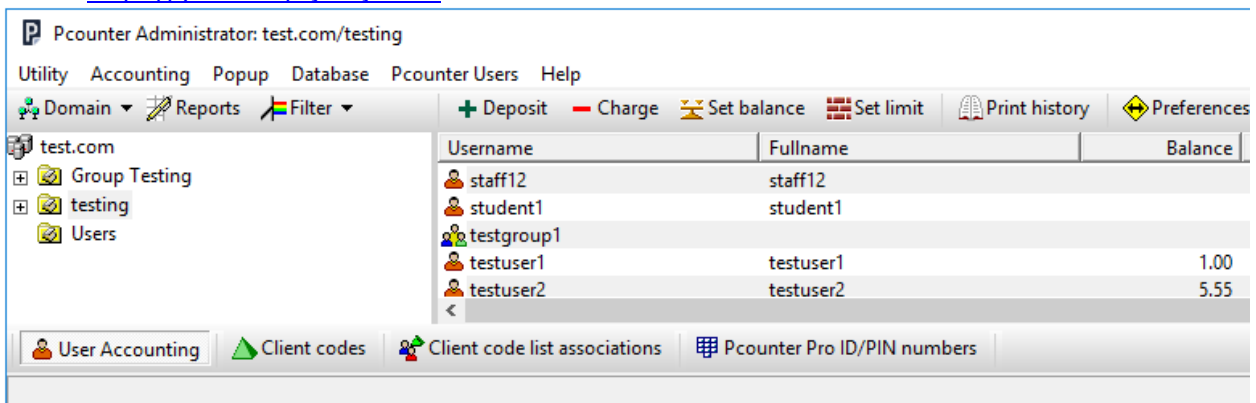
Pcounter Administrator is used to run usage reports/print histories, manage user balances, manage client codes, manage Pcounter Users, manage ID#,s, and more.

Pcounter Administrator integrates with AD in real time to read all OUs, groups, and user accounts from the domain automatically.

For more Pcounter Administrator information, please consult our training videos located online at:

Part 1: <https://youtu.be/FxwmXCE6ebU>

Part 2: <https://youtu.be/5jLsOj4tKJw>



2.2.0 - Pcounter Utilities Quick Overview

Pcounter Clients:

PPopup.exe, PcounterClient.exe, PcounterClient.dmg

Workstation clients that pop up a window after each print job, allowing users to enter additional information for the logging of the job, such as client matter numbers, job codes, or for print release purposes a username/pw to change the owner of the print job. For detailed PPopup information, please consult our PPopup Training Video online at: <https://youtu.be/chSbuDZJhQ>

Pcounter Printer Control Service

Pcounter service running on the Windows print server, which monitors print jobs and integrates with Window's Print Spooler service.

Pcounter Data Server Service

Pcounter service that manages all logged usage data.

ACCOUNT.EXE

A command-line account balance management utility and web application for administrators to make deposits.

WBALANCE.EXE

Client-side application for users to check their own account balances via taskbar icon.

BALANCE.EXE

A web application for users to check their own account balances via a self-service web page.

For step by step Balance.exe web app installation, please consult the video online at:

https://youtu.be/J_IVgsgopnl

PLOTMGR.EXE

Plot manager for batch processing of plot files, includes support for client codes and job scheduling.

WSManager.EXE

Administrative utility for managing/tracking local printers on workstations.

2.3.0 - Installation File Locations

- Pcounter for Window's **default installation path** is: C:\Program Files (x86)\Pcounter for NT
- **Pcontrol** (Pcontrol.exe) will be located at C:\Program Files (x86)\Pcounter for NT
- **Pcounter Administrator** (PADMIN.exe) is at C:\Program Files (x86)\Pcounter for NT\NT
- All **Pcounter Clients** (PPopup.exe, PcounterClient.exe, PcounterClient.dmg, WBalance.exe and all their documentation files are located at C:\Program Files (x86)\Pcounter for NT\NT\Client
- The utilities **PADMIN.EXE, PCOUNTER.HLP, ACCOUNT.EXE, PLOTMGR.EXE, WEBCLIENT.EXE, BALANCE.EXE** all will be located at C:\Program Files (x86)\Pcounter for NT\NT

2.4.0 - 60 Day Trial Period

Pcounter includes a fully functional 60-day trial period. During this time, all features are enabled.

If Pcounter is not fully registered before the trial period expires Pcounter will stop working completely at the end of the trial period.

The trial period starts when any of the Pcounter services is fully started for the first time. The trial period status can be viewed in Pcontrol by selecting a server and choosing:

Pcounter configuration>Global Settings>Registration and trial period.

Please also consult the Pcounter “How to Register” video online at: <https://youtu.be/DKHMeept3JA>

Once Pcounter is fully registered it will never stop working even if the full registration expires before a new registration number is inserted.

Full and active registration is needed for both support and the latest software version.

2.5.0 - Windows and Active Directory

Pcounter integrates with Active Directory automatically and in real time. Pcounter works with Windows servers and Active Directory networks, in both native and mixed modes. Pcounter Administrator can navigate Active Directory trees and view users in organizational units, in addition to viewing NT4-compatible domains. Internally, Pcounter records user names using the syntax DOMAIN/Username.

2.6.0 - Disabling Server File Pooling (Manual)

NOTE. This process is performed during installation unless skipped.

Below is the registry key, location, and value needed for Pcounter to count properly.

Key Location:	HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\Print
DWORD Name:	DisableServerFilePooling (Should be set to 1)
Value	1

Pcontrol will automatically offer to set this value and restart the spooler if it has not been set.

For more information please see Microsoft Knowledge Base Article 815913.

<http://support.microsoft.com/?kbid=815913>

2.7.0 - Windows XP/7/10 as Print Server

This is not a recommended or supported configuration as Windows XP, 7, and 10 are workstation operating systems and have a limited number of incoming connections to variable maximum depending on version. With some versions only 10 users can connect simultaneously at any given time to print, access files, RDP, etc.

2.7.1 Windows XP Print Spooler Registry (Manual)

NOTE. This process is performed automatically by Pcontrol unless skipped.

The below registry change is made for each Pcounter printer (ie. printers which are using the Pcounter Port). Afterwards the Spooler service must be restarted. This is necessary only on the Windows XP PC acting as the server.

Key Location:	HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion \Print\Printers\<printername>
String Name:	SpoolDirectory

For more information, please see Microsoft Knowledge Base Article 815913.

2.8.0 - Pcontrol.exe Remote Registry Access Requirements

Pcounter keeps its printer configuration information in the registry of each Windows print server. If Pcounter printers are being configured remotely from another computer on the network, it is necessary to have access to the Windows print server's registry.

Using the Regedit utility, **permissions can be set** for the entire registry or individual keys so as not to compromise the security of the server.

For technical information on how to allow access to the Windows registry over the network, please read the Microsoft Knowledge Base Article (Q153183) <http://support.microsoft.com/?kbid=153183>

2.9.0 - Network Printing Concepts

For Pcounter to record job usage, all print jobs must be submitted to the Pcounter configured print queues on the Pcounter print server.

Direct printing (printing that is sent directly to printers) will not be tracked unless the user workstation has been configured with WSManger to track the workstations locally installed direct printers.

Workstations that access printers directly should ideally be changed to print through the Pcounter print server.

2.10.0 - Authenticated User Logging & Strict Accounting

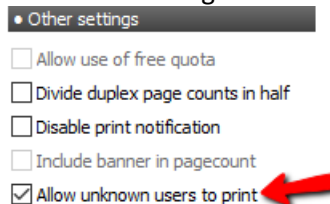
Pcounter integrates with Active Directory Domains in real time automatically.

If an Active Directory User prints through a Windows Printer Share to a Pcounter enabled printer all print job usage recorded by Pcounter will automatically include the valid Active Directory Username in the format *"Domain/Username"*.

When using authenticated Active Directory Users, and Pcounter Users, "Strict Accounting" is possible where print job prices are calculated by Pcounter and charged against the authenticated user's Pcounter balance.

In a strict accounting scenario, users with a low balance can be rejected or allowed to continue below the low balance limit.

Users that cannot be authenticated and are unknown can be rejected by unchecking the box 'allow unknown users to print' in each printer's Pcounter configuration.



2.11.0 - Logging & Accounting Modes

There are two modes for logging & accounting, 'Passive Logging (Log File Only)' and 'Strict Accounting (User Account Balances & Log File)'.

2.11.1 - Passive Logging (Log File Only)

Passive logging is when Pcounter only captures print usage data, without interfering with the print job in any way. Pcounter silently logs all print usage data as users print to the server's Pcounter enabled print queues. The user should be unaware of any changes in this scenario other than they may see that their printer is now using a Pcounter Port.

Any prices set in Pcounter will be calculated for display purposes but not subtracted from the user's balance.

2.11.2 - Strict Accounting (User Account Balances & Log File)

With Strict Accounting, Pcounter performs normal logging and in addition any prices set in Pcounter will be subtracted from the user's unique account balance.

Whether a user's job prints or not is determined by 'action if below low balance limit' set per printer, the cost of the job, and the user's available balance. Usage data is still captured in the Pcounter.log.

2.12.0 - Networks with multiple/trusted domains

When a print job is processed, Pcounter verifies authenticates the print job owner per the user authentication configuration in Global Settings.

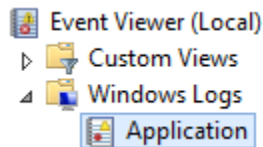
If the user is not found in Pcounter Users or the server's current domain then other trusted domains and subdomains will be searched.

Pcounter logs the username in the format of "Domain/Username" for reporting.

2.13.0 - Event Viewer (Error Logging)

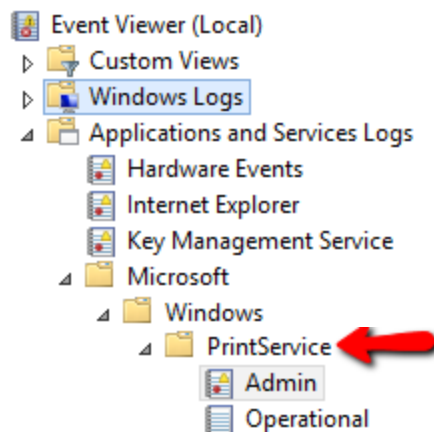
Error such as configuration problems, jobs which cannot be counted, etc. will be recorded the **Windows Event Viewer** at: Event Viewer > Windows Logs > Application

e.g.



The **Print Spooler Event Viewer Log** can be found at: Event Viewer > Applications and Services Logs > Microsoft > Windows > PrintService

e.g.



2.14.0 - Pcounter.log Overview

With Pcounter 2.x: Pcounter records all usage data in a comma-delimited .CSV style file named 'PCOUNTER.LOG' located in the Pcounter\Data directory on the Pcounter Data Server.

With Pcounter 3.x: Pcounter records all usage data both in the configured Pcounter Database and in the 'PCOUNTER.LOG' file on the Pcounter Data Server as a backup.

The Pcounter.log file will be located by default at:

\\DataServer\Pcounter\Data\PCOUNTER.LOG.

Users with PAdmin.exe for reporting should be allowed 'Read' to the **PCOUNTER.LOG** directory's NTFS and Share permissions.

PCOUNTER.LOG is written in ASCII delimited format. PAdmin generates reports and print histories by reading this file. It can also be imported to a spreadsheet or database program for more detailed analysis.

ASCII delimited field names:

DomainName\UserName

Document name (Pcounter) or Accounting Operation (PAdmin)

Printer name (Pcounter) or User performing transaction (PAdmin)

Date

Time

Computer from which printing or accounting transaction originated

Client code

Subcode

Paper size

Features (Duplex, Number of copies)

Size in bytes

Page count

Cost

Account Balance

Features field entries:

/Ts Time stamp

/D Duplex

/Cp Number of job copies

/C Color

/Cg Color pages

/Jt Job type (for internal use)

/Mt Media type

/NB Non-billable cost

/Nu Pages per sheet

p

2.15.0 - Pcounter Administrator (PAdmin.exe) Overview

Please see our Pcounter Administrator Training Videos online at:

Part 1: <https://youtu.be/FxwmXCE6ebU>

Part 2: <https://youtu.be/5jLsOj4tKJw>

- PAdmin is a Win32 utility for maintaining user account balances, viewing user print histories, and generating printing reports.
- PAdmin runs on any version of Windows. PAdmin does not run on any version of any other OS.
- PAdmin can be launched by double clicking on the program icon or by right-clicking on a server or domain in Pcontrol and selecting Pcounter, Accounting. Multiple instances of PAdmin can be run for multiple domains.
- PAdmin can browse user lists from Active Directory domains and organizational units, NT4-compatible domains, and local accounts on servers and workstations.
- To modify account balances, client codes, and ID#s users must have Read, Write, & Modify permission to the `\\DataServer\Pcounter\Data` directory's NTFS and Share permissions.
- To run reports on the active **PCOUNTER.LOG** file users must have Read, Write, & Modify permission to the `\\DataServer\Pcounter\Data` directory's NTFS and Share permissions.
- PAdmin's local preferences are kept in the registry. Custom functions can be assigned to double-clicking on users and groups, setting sorting options, and selecting which fields to view/print in print histories.
- Multiple users can be selected to perform various operations, but groups will be ignored if multiple selections are made. Operations on groups must be done one at a time.
- Account balance displays are updated only when users are selected.
- Right-click on any object for a quick popup menu.

2.15.1 PAdmin Terminology

Deposit:	Add to an account balance
Charge:	Subtract from an account balance
Low balance limit:	Minimum allowable account balance
Print history:	Summary of printing activity

2.15.2 PAdmin Print Histories & Reports

Just select the Print History or Reports button - calculate printing totals for various categories. PAdmin can read from the current **PCOUNTER.LOG** file, or any combination of log files. Reports can be saved in HTML, Comma-delimited text (CSV), or space-padded text files. Reports can also be sent by email using a MAPI-enabled program such as Eudora, Netscape Communicator, Outlook, and Outlook Express.

Database functions

Remove deleted records - will reclaim wasted space from the database file.

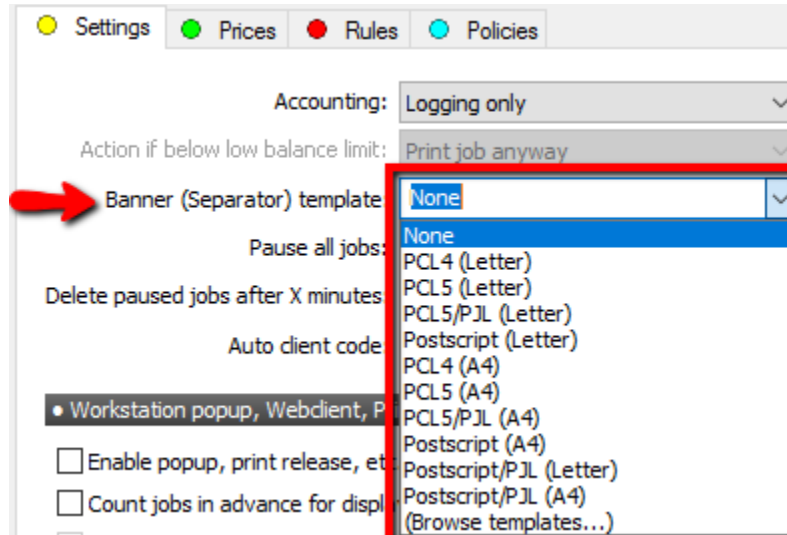
Reindex - will create a new index for the database file.

Import - please see the appropriate popup section.

2.16.0 - Pcounter Banner Page Overview

Pcounter has a built-in banner page function to separate print job output. The banner page includes the username and document name. Pcounter banner pages are enabled per printer in Pcontrol in each printer's 'Settings' tab.

e.g.



The following is a list of available banner templates:

- None: No banner printed
- PCL4 (Letter): HP LaserJet Series II or equivalent - letter size paper
- PCL5 (Letter): HP LaserJet III or equivalent - letter size paper
- PCL5/PJL (Letter): HP LaserJet 4 or equivalent - letter size paper
- Postscript (Letter): Any Postscript printer - letter size paper
- PCL4 (A4): HP LaserJet Series II or equivalent - A4 size paper
- PCL5 (A4): HP LaserJet III or equivalent - A4 size paper
- PCL5/PJL (A4): HP LaserJet 4 or equivalent - A4 size paper
- Postscript (A4): Any Postscript printer - A4 size paper
- Browse Templates: To select a custom template

Banner Templates can be customization using a word processor, below are some notes:

- Generate the banner template by printing to a file, using a Postscript or PCL driver.
- Use internal printer fonts, and any fonts used should be printed as characters (not bitmaps).
- Make sure that printer language commands are not inserted between the characters. If this happens, Pcounter won't be able to recognize the information fields above nor place any information on the banner.
- Keep the banner templates as small as possible - obviously larger banner files take longer to print.
- For Pcounter to insert specific print job information, use the following variables (as they appear with the brackets) in the template:
<USERNAME> <MACHINE_NAME> <FULLNAME> <PAGES>
<COST> <DOCUMENT> <PRINTER> <DATE> <BALANCE> <CLIENT_CODE>

3.0.0 - Pcounter Services & Port Information

3.1.0 - Pcounter Services & Port Overview

Global Settings
Printers
Popup
Data Server
Services/Ports
LPD Server
Message Text
Message Transport
Real time monitor

Current version: 2.92c

Printer Control service - Client IP ports: 7442 7443

Data Server service - Client IP ports: 6442 6443

[Windows firewall script](#)

The Pcounter Printer Control service is running.
Version 2.92c [2021.12.13]

Remove Update Stop

The Pcounter Data Server service is running.
Version 2.92a [2020.10.07]

Remove Update Stop

The Pcounter Port is installed.
Version 2.92c [2021.11.02]

Remove Update

- There are 3 major components of the Pcounter accounting system: the Pcounter Printer Control service, Pcounter Ports, and the Pcounter Data Server service.
- To view the Pcounter Services and Port, open Pcontrol and browse to Pcounter > Configure Pcounter Server > Services/Ports.
- The Pcounter Printer Control service and Pcounter Port work together to manage printers and must both be installed and used to track printing.
- The Pcounter Data Server service manages all Pcounter printer accounting data and can run on any Windows computer.
- The Printer Control service can exist on any number of Pcounter Print Servers as needed to collect print job
- The Pcounter Data service can be installed on one to centralize data collection, or the Pcounter Data service can be installed on each Pcounter Print server to separate the data collection by server.
- This modularity allows Pcounter the flexibility to scale to any size of implementation.
- **Pcontrol.exe** must be used to install/remove the Pcounter Services and Port. See the Pcounter Setup Video & Document for more info.

3.1.1 - Pcounter Services TCP/IP Ports

The Pcounter Service each require two TCP/IP ports for incoming client connections.

These ports should always be left at default unless absolutely required. Changing back to default will be one of the first support procedures should a problem be encountered.

The Pcounter Printer Control service will use TCP Ports 7442 and 7443 by default. The Printer Control Service ports are used by the Pcounter Popup Clients.

The Pcounter Data Server service will use TCP Ports 6442 and 6443 by default. The Pcounter Data Service ports are used for data logging and Pcounter Web Administrator (PWA).

3.2.0 - Pcounter Printer Control Service

Upon installation, the Pcounter Printer Control service will be configured with 'Startup Type: Automatic' so that it will run automatically when the system boots. It is possible to start and stop the service any time using Pcontrol from any computer on the network, if network permissions have been granted to do so.

If a printer's popup or pause all jobs setting is changed, then the service should be restarted. All other settings are dynamic (including adding new monitored printers), and the service does not need a restart.

The SYSTEM account should have Full Control permission on all Pcounter-controlled printers. In most cases it is not necessary to specify this permission.

The service software can be updated without needing to reinstall it. Any configurations that have been previously applied will not be affected.

3.2.1 - Data types and spooling

Often Pcounter is being used to determine the attributes of a print job before allowing it to print; for example, in rules, allowing paper sizes, ensuring that there is enough credit to print, and counting jobs in advance. In these cases, it is necessary for the printer's **Spooling** setting to be set to **Start printing after last page is spooled**. This ensures that available print job information will be complete when the job starts printing. Jobs which begin printing before the last page is spooled are likely to be mishandled in the above circumstances.

The print job data type is another important printer setting. The EMF data type is a metafile, and the RAW data type is the native driver format, such as PostScript or PCL. RAW data type is best for Pcounter operations - this allows Pcounter to read the exact data that will be sent to the printer and handle the job accordingly. If EMF data type is used, then Pcounter must rely on the spooler print job record settings before the job prints, which are not always accurate. RAW data type will be used if **Enable advanced printing features** is **turned off** in the printer properties.

Each of these settings can be found on the **Advanced tab** of the **Printer Properties**.

3.3.0 - Pcounter Data Server Service

The Pcounter Data Server service manages all Pcounter printer accounting data. It can be installed on any Windows Workstation or Server, even if it is not a Pcounter print server. Every Pcounter print server has a Data Server defined in Pcontrol's Global Settings. This is where the Pcounter Print server will send its log data. All Pcounter servers can be pointed to one Data server which effectively stores all logged data in one central location for easy reporting. The Pcounter Data Server service should only be run on one server in the environment.

Pcounter 2.x:

- With Pcounter 2.x a Pcounter share is created when the Pcounter Data Service is installed. **\\DataServer\Pcounter** is the Pcounter share network path.
- With Pcounter 2.x the Pcounter log file and account balance databases are kept in the **\\DataServer\Pcounter\Data** directory on the Data Server, where **\\DataServer\Pcounter** is the Pcounter shared directory.
- With Pcounter 2.x users should be given read permission to the Pcounter share. This directory contains Global Settings and the popup client code database.
- With Pcounter 2.x administrators, users who need to manage account balances, and users who need to get printing statistics should be given read/write permission to the **Data** directory. For privacy and security purposes, normal users should not be given any access to this directory.

Pcounter 3.x:

- With Pcounter 3.x the Pcounter Data Service manages the connection between Pcounter and the configured database, such as SQL, MySQL, etc.
- All Pcounter balances, ID#,s, client codes, logged usage, etc. resides in the configured database.
- With Pcounter 3.x Pcounter the Pcounter 'share' is still required. The Pcounter share is created when the Pcounter Data Service is installed. The path to the Pcounter share by default is **\\DataServerName\Pcounter**.
- Periodically client codes and client code associations are automatically exported from the configured database to reside locally in the Pcounter share so that they can be read by the PPopup.exe Client. By comparison the PcounterClient.exe Client uses the configured database natively.
- With Pcounter 3.x a Pcounter log file will be created that will contain a backup of the data logged in the Pcounter Database. The Pcounter.log resides at **\\DataServer\Pcounter\Data** on the Pcounter Data Server.

Upon installation, the Pcounter Data Server service will be configured with "Startup Type: Automatic" which means that it will run at system boot time. However, it is possible to start and stop the service any time using Pcontrol from any Windows computer on the network.

3.3.1 - Configuring the Data Server service

Create new log file and rename old log file

With Pcounter 2.x the Data Server can periodically rename the **PCOUNTER.LOG** file so that each log is separated by time intervals. A new log will automatically be created. If Never is selected, then the log file will grow infinitely, and it will be necessary to monitor it manually.

3.3.2 - Account balance notification

The Data Server can optionally send a broadcast message to users which informs them about their current account balances. This will only occur if Accounting is set to User account balances and log file in the printer's Pcounter configuration.

3.3.3 - Data Server Outage

- When a printer's Accounting setting is **User account balances and log file**, a job will not start printing if the Data Server is down. If the Data Server goes down after a job begins printing but before the job is logged, then Pcounter will store the job information locally until the Data Server is started again.
- When a printer's Accounting setting is **Log file only**, jobs will print normally and Pcounter will store the job information locally until the Data Server is started again.
- If the **ID and password** popup is being used, then popup passwords will not be verified.

3.4.0 - Pcounter Port

The Pcounter Port is used to capture print data usage. The Pcounter Port must be used by every Windows Printer Share that should have its print data usage captured. The Pcounter Port integrates directly with the Windows spooler and controls transmission of data to printers.

When using the Pcounter Port:

- Pcounter can see exactly what has been sent to the printer and will not charge for unprinted documents
- Pcounter can monitor the online status of the printer and handle jobs accordingly
- Pcounter can query the printer for exact page usage per job
- Pcounter can query the printer for color page usage on many printers
- Pcounter can efficiently load balance jobs between multiple printers with no CPU overhead

It is necessary for the Pcounter Printer Control service to be running on Windows print servers along with Pcounter Ports. If the Pcounter Printer Control service is stopped, printing will stop until it is running again.

3.4.1 - Installing the port monitors

Unfortunately, Windows does not support port installation from remote computers, so it is necessary to install Pcounter on the print server, run Pcontrol, and then install the Pcounter Port locally. Using Pcontrol, install the port monitors in the Pcounter server configuration (Services/Ports tab).

3.4.2 - Using the Pcounter Port Wizard

The Pcounter Port Wizard is found on the Printers tab of the Pcounter server configuration. It can be used to:

- Create new Pcounter ports - the wizard will make the best choice based on the current port configuration.
- Edit/configure existing Pcounter ports.
- Remove Pcounter ports and restore the original ports.

3.4.3 - Manually adding/configuring Pcounter ports via Printer Properties.

Open any printer's **Properties**, select the **Ports** tab, and press the **Add Port** button. The Pcounter Port will appear in the **Available Printer Ports** list, so that it can be saved to the printer's configuration. Press the **Configure Port** button to edit existing Pcounter port settings.

3.4.4 - Updating port monitors

It is necessary to stop the Spooler service any time the Pcounter Port software is updated. Pcontrol provides a way to update the Pcounter Ports by stopping the Spooler, copying the files, and then restarting the Spooler. Stopping the Spooler will interrupt current print jobs.

When updating from the previous (2.15 or earlier) 4 port types (AppSocket, LPR, Parallel, OtherPrinter), Pcontrol will automatically convert the ports to the newer Pcounter Port specification using the previously defined protocol and uninstalls the previous ports from the spooler.

3.4.5 - Use SNMP to check printer status and/or retrieve page counts

Using SNMP, the Pcounter Port can:

- Check a printer's online status and optionally move jobs to other printers and/or send notification to the user.
- Retrieve the actual page count from the printer after the job has been sent to the printer, which ensures that users are charged only for what comes out of the printer.
- Retrieve color page counts on many types of printers, so that the number of color pages in each job can be charged accordingly.

3.4.6 - Pcounter Port Protocols and Settings

The following protocols may be used with Pcounter printing:

- 1) **TCP/IP (Raw/AppSocket).** This protocol is functionally equivalent to using the RAW setting with the Windows TCP/IP port. Most laser printers, plotters, and multi-function devices support raw TCP/IP printing on port 9100. External print servers can use separate port numbers for each physical port on the print server - for example, the HP JetDirect EX+3 uses ports 9100, 9101, and 9102.

Special setting for Pcounter Pro pull queues – if the print queue is being used as a dedicated Pcounter Pro pull queue that does not have an associated printer, set the target IP address to 0.0.0.0. Any print jobs that are resumed from a pause state or otherwise accidentally allowed to print will be automatically paused again.

- 2) **LPR.** LPR/LPD is a print queuing standard that is supported by most network printers and operating systems, and also uses the TCP/IP protocol. It requires slightly more overhead than Raw/AppSocket. (LPR is the client and LPD is the server.)

Printer/Queue name: Enter the print queue name as specified by the LPD server.

Local Port Bindings:

RFC 1179 compliant: Use this only if the remote LPD host requires RFC 1179 compliance. The local TCP port numbers are restricted to the 721-731 range. This could result in conflicts with other LPR ports since only 11 local ports are available. Most devices do not require RFC 1179 compliance.

Typical Extended: Uses local TCP ports 512-1023.

Uses local TCP ports 1024 and greater. The advantage here is that local port conflicts are less likely between other LPR ports and applications.

Count partially sent/interrupted print jobs:

If the LPD server is a printer, then incomplete jobs are likely to print anyway, as most printers start printing as soon as they begin receiving data. However, if the LPD server is a computer, then incomplete jobs are likely to be deleted from its queue. Check this box if Pcounter should count incomplete jobs.

Enable LPR byte counting:

Some LPD servers need to know the number of bytes in the print job being sent in advance. This may require extra processing. Many printers do not require byte counting, so this setting should be disabled as often as possible.

- 3) **Local Port.** Use this setting if print jobs should be sent to a local parallel port or to a file.

- 4) OtherPrinter.** This setting is used to send jobs to other print queues on the same Windows print server. Its purpose is to support printers that use protocols not directly supported by Pcounter ports, such as AppleTalk and USB, or if it is preferred to keep using currently installed ports. Each physical printer has 2 print queues, one for counting and one for printing. The easiest way to setup the OtherPrinter protocol is to use the Pcounter Port Wizard, which creates an output print queue directly linked to the original Windows printer port.

However, for manual configuration of an OtherPrinter port:

- Create a new printer using the same driver and the same port configuration as the current printer.
- Assign the Pcounter Port OtherPrinter protocol to the current printer, using the new printer as the Output printer name. This way, it won't be necessary to reconfigure any workstations to print to a different printer.
- Do not share the new printer, or else users will be able to print to it and bypass Pcounter printer accounting.
- Likewise, if necessary, remove any permissions for users to use the new printer locally.
- The SYSTEM account should have Full Control permission on the new printer.

Number of jobs counted ahead of printer

Since the OtherPrinter protocol is printing to a queue instead of to an actual printer, it may move jobs to the queue faster than they can print. Pcounter accounts for and logs the job as soon as it has been sent to the output queue without knowing whether the job has been printed. This setting controls the number of jobs that can be in the output queue at any time. For example, a setting of one means that no jobs will be moved until the output queue is empty.

- 5) Load Balance.** The Pcounter Port load balancing option is more intelligent than Windows printer pooling. Printer pooling allows multiple ports to be assigned to a single print queue. Ports in a printer pool are always used in the same order - the first job is always assigned to the first port, and the second port only receives a job if the first port is busy. Pcounter load balancing differs from printer pooling in that an additional queue is needed (to which users should submit jobs) called the master queue and should be shared. The print queues to which jobs are distributed are called child queues and should not be shared. Generally, users should not be allowed to submit jobs directly to child queues.
- Jobs will be distributed to child print queues which have the least number of jobs waiting, or else distributed evenly to child print queues in a round-robin fashion.
 - When jobs are distributed to a child print queue, no Pcounter rules or other processing will occur on the master queue. The Pcounter port on the child queue will handle all processing. Therefore, the Pcounter printer configurations should be set on the child queues as needed.
 - Jobs will not be distributed to child print queues that are paused or have an error status. This makes it easy to manage if one of the child printers is down. If the child Pcounter Port detects that a printer is offline, then it will automatically set the error status so that no further load balanced jobs will be distributed to it.
 - When Spooler notification messages are being used, make sure that messages are sent to users and not computers. This setting is found in Start/Settings/Printers/File/Server Properties/Advanced.
 - Pcounter load balancing requires no additional CPU overhead, and spool files are not rewritten.

3.5.0 - Pcounter Services on Windows Clusters

Pcounter server components (ie. Services and Ports) are used in a Windows cluster in a similar fashion to the typical usage on a standalone server. The main difference is that on a cluster, the Pcounter components are elements of cluster resources, allowing them to be associated with active cluster nodes and groups, and managed in Cluster Administrator.

General cluster notes

- The Pcounter InstallShield setup should be run on each cluster node so that the software is available on each cluster node desktop.
- When managing cluster resources, Pcontrol will attempt to install/update software (in a single operation) on each node with which the cluster resource is associated. Please make sure that all nodes are running when doing install/update operations, and that software versions are in sync on all required nodes.
- Print management (via Pcontrol) can be done from a cluster node or from a remote workstation desktop on Win32 clusters. On x64 clusters, print management must be done from a cluster node desktop or terminal session.
- Global/Popup settings will be consistent across virtual servers, as they share the same registry locations on the cluster nodes.

PcounterPrint resource (Generic Service)

- The Pcounter Printer Control service is started and stopped along with this resource and a Print Spooler resource upon which it is dependent.
- Multiple PcounterPrint resources may be created and used, in an active-active mode. One PcounterPrint resource may be associated with (dependent upon) each Print Spooler resource in a cluster. Each PcounterPrint resource will be given the name PcounterPrint_XXXX, where XXXX is the network name used by the Print Spooler resource and cluster group.
- Pcontrol is hard-coded to work with specific resource names. Please do not rename the PcounterPrint_XXXX resource unless the network name of the cluster group has been renamed.
- The Pcounter Port is installed on each cluster node and on the virtual cluster server. Pcounter Ports can be managed as usual using the Port Wizard in Pcontrol, or in the printer properties via the virtual cluster server's Printers folder. Printers that are local to the cluster nodes are not supported, only printers on the virtual cluster servers are allowed.
- It will be necessary to take all PcounterPrint_XXXX resources in a cluster offline when updating the services and ports to future versions, because the Pcounter Port is installed on each cluster node, and the files are used in each virtual server.

Pcounter Share resource (File Share)

- The Pcounter Share resource is dependent only upon a physical disk cluster resource and allows the Pcounter share to be cluster-aware and moved between nodes as needed. Only one Pcounter Share resource is supported per cluster, since the cluster does not allow duplicate share names.
- Pcontrol is hard-coded to work with the specific resource name "Pcounter Share"; please do not rename it.
- (Windows 2008) File Share resources have been removed. File shares are now configurable outside the cluster management MMC. Pcontrol will configure the Pcounter share in the cluster in a similar fashion as it does on non-clustered servers.

Pcounter Data resource (Generic Service)

- The Pcounter Data Server service is started and stopped along with this resource and a Pcounter Share resource upon which it is dependent. Since only one Pcounter Share resource is supported per cluster, it is also only possible to have one Pcounter Data resource in the cluster. Therefore, the Pcounter Data resource is only supported in an active-passive mode.
- Pcontrol is hard-coded to work with the specific resource name "Pcounter Data"; please do not rename it.
- (Windows 2008) Since File Share resources have been removed, the Pcounter Data resource will be made dependent upon the Network Name of the cluster server and the Disk Resource that hosts the Pcounter share.

3.6.0 - Pcounter Services on Windows Server Core

Pcounter print and data services can run on Windows 2008 Server Core. However, all configuration must be done from a local workstation or server desktop that supports the full Windows user interface.

It will be necessary to install the Pcounter Port on the local machine to configure Pcounter Ports on the Windows 2008 Server Core. If the Pcounter Port is not installed, Windows Explorer will display "The request is not supported" every time an attempt is made to add/remove/configure Pcounter Ports on the Windows 2008 Server Core.

To configure printing on the Windows 2008 Server Core, run Pcontrol on the local machine, choose Pcounter → Configure Pcounter Server, and enter the Windows 2008 Server Core computer name, or browse to the server via the workgroup and right-click for a context menu. All configuration options are supported.

4.0.0 - Pcontrol Detailed Overview

4.1.0 - Global Settings

Global Settings

Printers

- Popup
- Data Server
- Database setup
- Services/Ports
- LPD Server
- Message Text
- Message Transport
- Real time monitor

• Get user information from

Primary Domain Controller

Other server:

Local domain or directory (preferred) [Manage trusts](#)

Additional domain or server:

Login name for remote server:

Password for remote server:

Use remote credential for AD access

Validate client passwords from external LDAP server

• Other settings

Data Server

Numerical format for prices/costs: Currency Decimal digits

[Delete paused jobs after](#) minutes

Maximum job move rules:

4.1.1 - Data Server

Specifies the Pcounter Data Server. By default, this will be populated with the current server being configured. Change this only if the Pcounter Data Server service is located on another server.

4.1.2 - Delete Paused/All Jobs After X Minutes

Print jobs can be deleted if they are still in the queue after a specified number of minutes. Either paused jobs only, or all jobs can be deleted. A value of zero (0) disables this feature. This setting only applies to printers using Pcounter Ports. Click the text to toggle between paused jobs or all jobs.

4.1.3 - Numerical Format

The numerical format determines how costs and balances are displayed.

- **Pages.** One accounting unit = One page. Use this if for allocation of printing quotas in pages.
- **Currency.** Accounting is kept in terms of local currency. The type and format of the local currency are determined from local Windows settings.

4.1.4 - Maximum move job rules

It is possible to setup compound rules where print jobs are moved repeatedly between printers. This setting controls the maximum number of job moves allowed due to rules.

4.1.5 - Log rejected jobs

Print jobs which are rejected for any reason (insufficient balance, invalid paper size, etc.) can be logged to a text file called **REJECT.LOG**, on the Data server in the **\PCOUNTER\Data** directory. This file will grow indefinitely, so make sure it is deleted periodically. Check the box to enable.

4.1.6 - Default Printer Configuration Template

When a printer is migrated into Pcounter, it will use the Default Printer Configuration Template upon creation to define the printer's Pcounter configuration.

The Default Printer Configuration Template can be modified to ease administration.

Below are the default settings used by the Default Printer Configuration Template:

Accounting:	Log file only	Delete duplicate jobs	No
If below low balance limit:	Delete job	Allow unknown users to print:	Yes
Banner (separator) template:	Blank/None	Reject job types:	None
Duplex Handling:	Ignore	Enable popup window:	No
Job size limit:	Zero/None	Keep job paused after popup:	No
Job pagecount limit:	Zero/None	All paper sizes:	Allowed
Disable print notification:	No	All Prices:	Zero
Pause all jobs:	No	Default paper size:	Letter
Count jobs in advance:	No		

Global Settings

- Printers
- Popup
- Data Server
- Database setup
- Services/Ports
- LPD Server
- Message Text
- Message Transport
- Real time monitor

• Get user information from

Primary Domain Controller

Other server:

Local domain or directory (preferred) [Manage trusts](#)

Additional domain or server:

Login name for remote server:

Password for remote server:

Use remote credential for AD access

Validate client passwords from external LDAP server

• Other settings

Data Server:

Numerical format for prices/costs: Decimal digits:

[Delete paused jobs after](#) minutes

Maximum job move rules:

Log rejected jobs

[Default printer template/Global rules & policies](#)

[Registration and trial period](#)

[Export settings to another server](#)

4.1.7 - Login Name/Password for Remote Server Access

Specifies the Domain Administrator account that should be used to do remote server tasks such as reading User Attributes in AD.

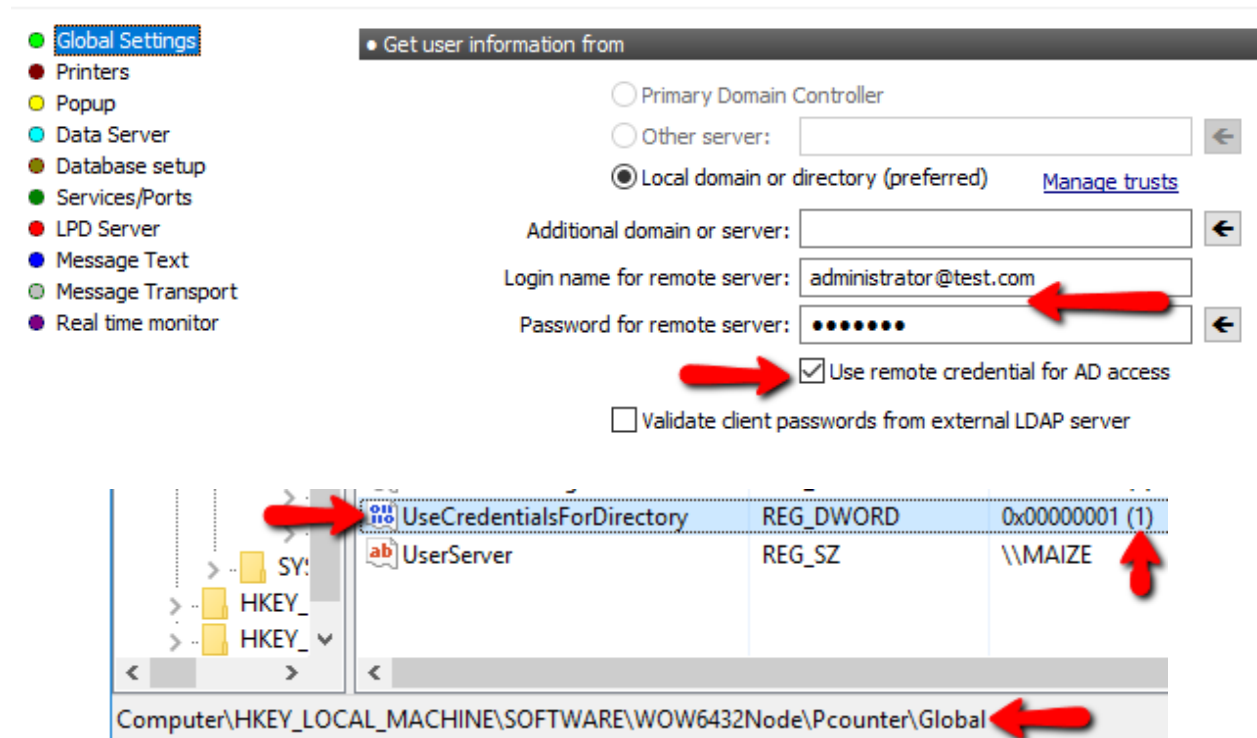
Use a Domain Administrator Account, create a service account if needed.

4.1.8 - Use remote credentials for AD access

If this box is checked then the credentials defined above will be used to lookup user attributes in AD. This requires a registry key be configured as well.

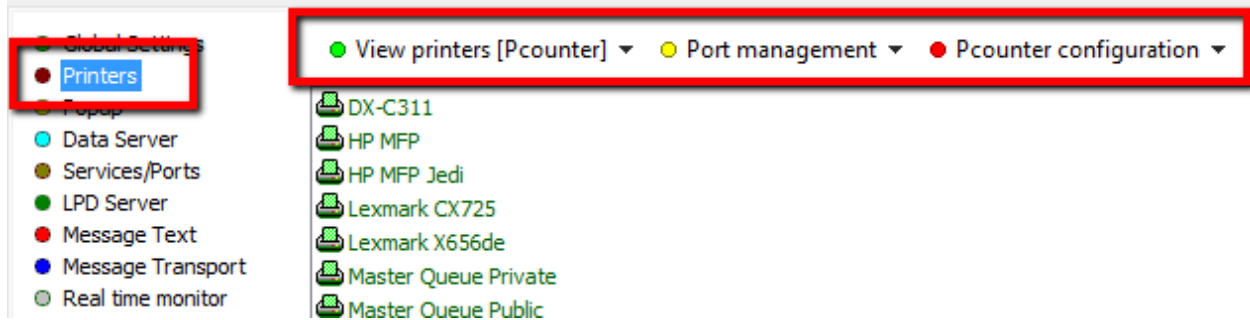
To do so:

- 1) On the Pcounter Server open Regedit.
- 2) Browse to HKEY_LOCAL_MACHINE\Software\Pcounter\Wow6432Node\Global
- 3) Create a new 32-bit DWORD named "UseCredentialsForDirectory".
- 4) Set the Data value to "1".
- 5) Restart the Pcounter Data Service to complete the change.



4.2.0 - Printers

Pcounter logging and accounting is enabled/disabled on server print queues in this area of Pcontrol.



4.2.1 - View Printers [Pcounter] & [Non-Pcounter]

Pcounter printers are print queues that are currently using a Pcounter Port.

They are displayed in green text.

Non-Pcounter printers are print queues that are currently using any port type other than a Pcounter Port, usually a standard TCP/IP or LPR port. They are displayed in red text.

4.2.2 - Port Management

When viewing Non-Pcounter printers, Pcounter Ports can be created using the Port Wizard (for migrating print queues one at a time) or the Pcounter IP Port Migrator (for migrating more than one print queue at a time).

Use the 'Restore Previous Port' option to toggle a print queue between its original port (usually TCP/IP or LPR) and its Pcounter Port for testing purposes.

4.2.3 - Pcounter Configuration

Use the 'edit Pcounter configuration' option to view and change the Pcounter configuration settings for each printer.

There are a number of shortcut options available as well; such as enable/disable Popup, Accounting=Strict/Accounting=Log Only, Reset to default, and copy/paste Pcounter configuration.

4.3.0 - Popup

The Popup Bullet is where the various Popup Profiles are created, and settings are defined for each. For detailed Popup information, please consult our PPopup Training Video online at:

<https://youtu.be/chSbuDZJhQ>

The screenshot displays the PPopup configuration interface. On the left, a sidebar lists various settings categories, with 'Popup' highlighted. The main configuration area is divided into several sections: 'Window type' (set to 'Client code list'), 'Information message type' (set to 'All printers'), 'Window title' (set to 'Print job billing'), 'Prompt' (set to 'Enter client code:'), and 'Client code name/length' (set to 'Client code' with a length of 49). A 'List options' dialog is open, showing a list of checkboxes for various settings, with 'Remember previous selections' checked. To the right, a 'Popup Profiles' panel shows a list of profiles: '(Default)' and 'test'. At the bottom, there are links for 'Display sample popup', 'Edit information message', 'Users exempt from popup', and 'Users blocked from popup'. A note at the bottom right states: 'Changes to the popup configuration do not require a service restart. Restart popup client sessions on workstations to apply changes.'

- **Windows Type:** Defines the currently selected Popup profile's window type.
- **Information Message Type:** For the currently selected Popup profile, defines whether the information message definition is global or per printer.
- **Window Title:** Defines the text in the Popup window on the client workstation.
- **Prompt:** Customizes the default Popup prompts.
- **Name/Length:** Only used for client code types. Define the code display name and maximum length of the entry field displayed to the user.
- **List Options:** Vary by Window Type
- **Display Sample Popup:** Use to preview the Popup using the currently defined settings
- **Edit Information Message:** Use to modify the 'global'/'all printers' information message.
- **Users Exempt from popup:** Use to exempt certain users from Popup.
- **Users Blocked from popup:** Use to prevent certain users from using Popup.

4.4.0 - Data Server

The Data Server is the Pcounter server where the Pcounter log file, user account balance database, and client code database are stored. This server must run the Pcounter Data Server service.

- Global Settings
- Printers
- **Data Server**
- LPD Server
- Message Text
- Message Transport
- Real time monitor

• General

Data server:

Pcounter share path:

Rename log files:

AD attribute for auto client code:

• Pcounter Web Administrator (PWA)

PWA uses the data server ports shown on the Services/Ports 1
At first, only the Admin account can access PWA. Other accou
can be activated through the System Settings section in PWA.

Default Admin account:

<http://westlink:6442/pwa>

[More information....](#)

• Send account balance notification message

After each print job

In a single server setup, the one server is both the Pcounter Data Server and the Pcounter Print server. The Pcounter Data Server service manages all Pcounter printer accounting data. It does not have to run on the Pcounter print server. Each Pcounter print server has a Data Server global setting, which can be pointed to the same server - this allows all printing data to be kept in one central location for easy access. It is only necessary to run the Pcounter Data Server service on one computer.

4.5.0 - Services/Ports

Services/Ports is where the Pcounter services and port update are installed and managed. Service updates are applied to the services and port in this screen, for info on installing a Pcounter Update consult our update guide online at:

http://apps.pcounter.com/docs/pcounter_install_change_upgrade.pdf

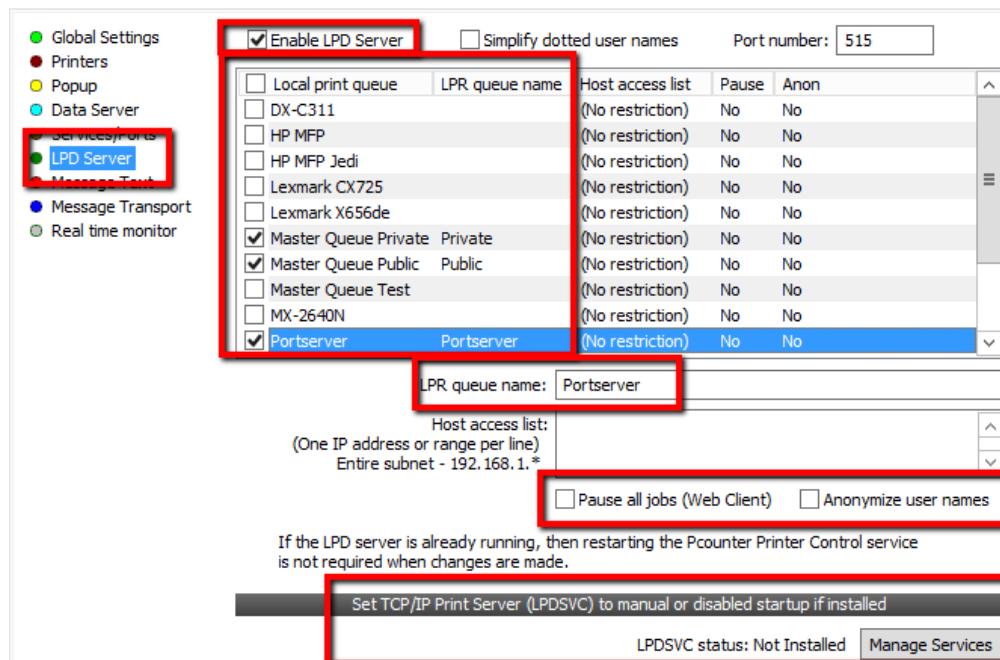
The screenshot displays the 'Services/Ports' management interface. On the left is a sidebar menu with the following items: Global Settings, Printers, Popup, Data Server, Services/Ports (highlighted), LPD Server, Message Text, Message Transport, and Real time monitor. The main content area shows the current version as 2.92c. Below this, there are two service configuration rows: 'Printer Control service - Client IP ports' with input fields for 7442 and 7443, and 'Data Server service - Client IP ports' with input fields for 6442 and 6443. A link for 'Windows firewall script' is provided. Three service status panels are shown below: 1) 'The Pcounter Printer Control service is running. Version 2.92c [2021.12.13]' with 'Remove', 'Update', and 'Stop' buttons. 2) 'The Pcounter Data Server service is running. Version 2.92a [2020.10.07]' with 'Remove', 'Update', and 'Stop' buttons. 3) 'The Pcounter Port is installed. Version 2.92c [2021.11.02]' with 'Remove' and 'Update' buttons.

4.7.0 - LPD Server

Pcounter's LPD server is a component of the Pcounter Printer Control service.

Advantages and features of the Pcounter LPD Server over the Microsoft LPD Service (LPDSVC):

- The Pcounter LPD server service is intended to replace the Microsoft LPD Service, thus the Windows LPD service should be set to 'Disabled' startup if it is visible in services.msc.
- Pcounter exports only chosen printers as LPD printers. Simply check the boxes of printers which should be LPR accessible. The LPDSVC always exports all printers as LPR printers.
- Pcounter LPD can restrict access to printers based upon specified IP addresses or IP address ranges. The LPDSVC does not have this feature.
- Pcounter LPD can pause all jobs. The LPDSVC does not have this feature.
- The Pcounter LPD job pausing feature is integrated more efficiently with the Web Client than using automatic Standard Pause or Super Pause in the Pcounter printer configuration with the LPDSVC.
- Pcounter LPD interprets the document names of jobs from Apple OS X correctly, LPDSVC does not.



- **To enable** the Pcounter LPD Server, check the box '**Enable LPD Server**', then restart the Pcounter Printer Control service.
- If jobs to a particular printer require input from PPopup and/or Webclient, then make sure that **Enable Popup Window** is set in the Pcounter printer configuration, and that **Pause all jobs** is set in the Pcounter LPD printer configuration.
- If **Anonymize User Names** is selected on any printer, then the print job owner name will be shown as: **pcounterAnonymous [IP address]**
- **Simplify dotted user names.** This is useful for jobs coming from Novell servers where the user name uses eDirectory syntax, such as user.ou.org. When enabled, the Pcounter LPD server will strip everything from the first dot and later.
- LPQ is supported, LPRM is unsupported.
- LPR/LPD does not require user-level authentication to print. The username sent with the job will be used without authentication.

4.8.0 Message Transport

Custom messages can be sent when Pcounter enforces rules or other events, such as when an invalid paper size is sent to a printer or when informing users about their account balances. Messages can be sent via SMTP email or via PPopup/PcounterClient.

Select how print job notification messages are sent to users.

Notification messages can be received by PPopup, Wbalance, and PcounterClients. They need no additional configuration to receive messages.

Enable SMTP Email

◆ Login name
◆ Password
◆ Reply To address
◆ SMTP server
◆ Subject
◆ Append domain
◆ Friendly name
◆ Encryption None

Send test message to: Test

Message Text. If a rule is enforced, then two message settings are combined into one message - one for the rule itself, and one for the action that was taken. For example, if the action taken on exceeding the byte size limit is to delete the job, the Above byte size message = “Your print document %D exceeded the maximum byte size limit on %P.”, and the Job deleted message = “It was deleted.”, then the messages would be combined and sent to the user. Modify displayed messages in the **Message Text** area of Pcontrol.

SMTP Settings

- **Login name** - This is the name that is used as identification to the SMTP server. Some SMTP servers require a valid address or domain in order to relay messages.
- **Password** - Passwords may be optional for local email delivery but are normally required for relaying email to other mail servers.
- **Reply address** - If users are to be able to reply to Pcounter email messages, then enter a valid email address for replies.
- **Subject** - enter an optional email subject, such as “Printer notification message”. If left blank, the document name will be used.
- **Append domain** – (Optional) The domain is added to the end of the username before sending. For example, if a username is joe and the domain is company.com, then the full email address to which messages are sent will be joe@company.com.

4.9.0 - Real Time Monitor

The Pcounter Printer Control service can also be used as a monitor to detect the online status of all printers that have an associated print queue on the server, whether configured to use Pcounter ports or other TCP/IP ports.

Global Settings
Printers
Popup
Data Server
Services/Ports
LPD Server
Message Text
Message Transport
Real time monitor

Real time monitor

Send email alert on errors
 Send email alert on paper tray warnings
 Send email alert on toner warnings
 Send email alert on other warnings
 Ignore if associated print queue is paused
 Resolve names of printer IP addresses for display

SNMP read community: public

Email subject: Printer alert

Poll interval (seconds, 0 disables all): 180

Resend alert if condition persists after X minutes: 0

Recipient list:
(One email address per line)

The Pcounter Printer Control service can also be used as a monitor to detect the online status of all printers that have an associated print queue on the server, whether configured to use Pcounter ports or other TCP/IP ports.

Pcounter can be configured to send email alerts on errors, and various warnings such as low paper and toner. The email alert messages also contain links to the printer's web server and a URL on the Pcounter server where updated status can be viewed.

Some email clients (such as Outlook) consider URLs with raw IP addresses to be possibly dangerous. The purpose of the "Resolve names of printer IP addresses for display" setting is to make friendly URLs. However, if the printer IP addresses do not resolve to names, then enabling this setting can inhibit performance.

Set the Poll Interval to zero to disable the Real Time Monitor.

5.0.0 - Pcounter Administrator

Pcounter Administrator is used to run reports, modify user balances, create or modify Pcounter users, view domain users, create or modify client codes, create or modify ID#s, and more.

For detailed Pcounter Administrator information, please consult our training videos located online at:

Part 1: <https://youtu.be/FxwmXCE6ebU>

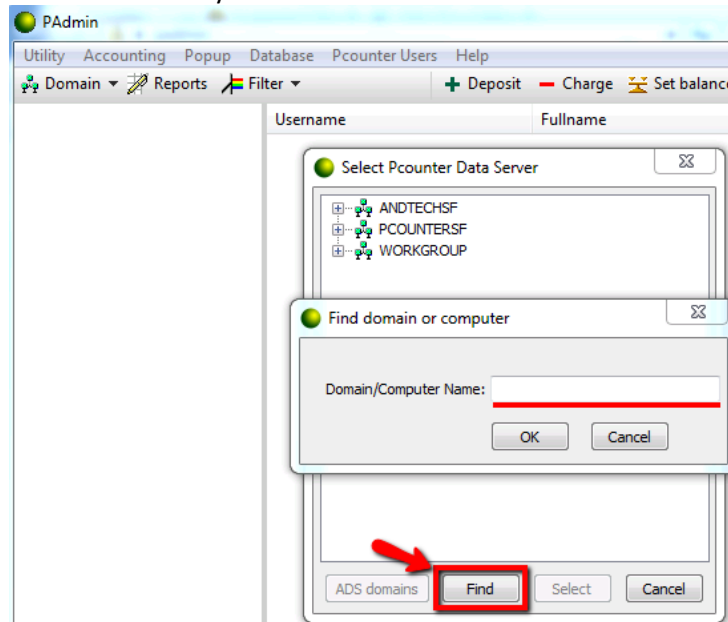
Part 2: <https://youtu.be/5jLsOj4tKJw>

5.1.0 - Distributing Pcounter Administrator

Pcounter Administrator can be run from any workstation in the same network as the Pcounter Server. This eases administration as a Remote Desktop session is not needed to access Pcounter Administrator.

To distribute Pcounter Administrator:

- 1) Copy the PAdmin.exe to the user workstation from the Pcounter server. This is an IT administrator task.
- 2) When the user launches PAdmin.exe for the first time they must either browse the network and locate the Pcounter server in the window that opens; or click the 'Find' button and type the Pcounter Server name manually.



- 3) To make changes, the user account will need modify and write permissions to the Pcounter and Pcounter\Data directories on the Pcounter Server.

5.2.0 - Pcounter Administrator Training Videos

For detailed Pcounter Administrator information, please consult our Padmin training videos located online at:

Part 1: <https://youtu.be/FxwmXCE6ebU>

Part 2: <https://youtu.be/5jLsOj4tKJw>

5.3.0 - Pcounter Web Administrator (PWA)

Pcounter Web Administrator is a built-in feature of Pcounter version 2.80 and newer. It provides much of the functionality of the PAdmin.exe (normal Pcounter Administrator) in a web browser.

PWA can be used to modify user balances, modify and create user ID#s and PIN#s, and modify and create Client Codes.

Reports can only be performed with PAdmin.exe (normal Pcounter Administrator).

The Chrome browser is recommended for Pcounter Web Administrator.

5.3.1 - PWA First Time Setup

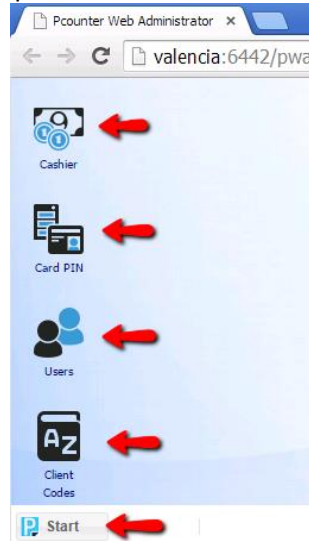
- 1) Open Pcontrol and navigate to the Data Server bullet in server configuration.
- 2) Make note of the username in 'Default Admin Account'.
- 3) Click the link below the 'Default Admin Account'. The link will be in the format of http://YOUR_SERVER_NAME:6442/pwa

The screenshot shows the Pcounter Administrator configuration window. On the left, a sidebar lists various settings: Global Settings, Printers, Popup, Data Server (highlighted with a red arrow), Database setup, Services/Ports, LPD Server, Message Text, Message Transport, and Real time monitor. The main window is divided into two tabs: 'General' and 'Pcounter Web Administrator (PWA)'. The 'General' tab shows fields for 'Data server' (set to \\MAIZE), 'Pcounter share path' (C:\PCOUNTER), 'Rename log files' (Never), and 'AD attribute for auto client code'. The 'Pcounter Web Administrator (PWA)' tab contains a text box for 'Default Admin account' (administrator) and a link 'http://maize:6442/pwa More information...'. Red arrows point to the 'Data Server' tab, the 'Default Admin account' field, and the link.

- 4) Clicking the link should automatically open a browser that navigates to the PWA web page, login with the administrator account username and password.

The screenshot shows a web browser window with the address bar displaying 'valencia:6442/pwa/index.html'. The page content is the Pcounter Web Administrator 1.0 login interface. It features a 'User Name' field containing 'administrator' and a 'Password' field with masked characters. At the bottom, there are 'Cancel' and 'Login' buttons. Red arrows point to the address bar, the 'User Name' field, and the 'Login' button.

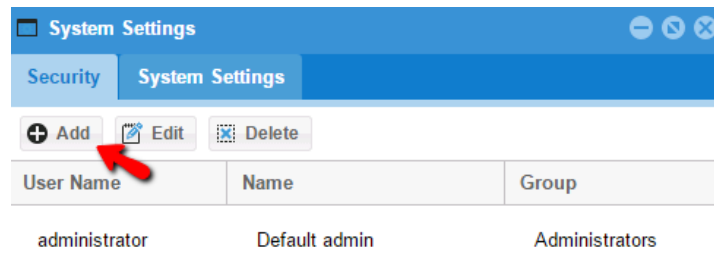
- 5) Once logged in as administrator, the PWA interface will be displayed.
 - 'Cashier' is used to modify user balances, via a search interface.
 - 'Users' is used to modify user balances, via an explorer interface.
 - 'Card PIN' is used to create or modify user ID#s and PIN#s
 - 'Client Codes' is used to create or modify Client Codes.
 - 'Start' (at the bottom) opens a task menu that has all options.



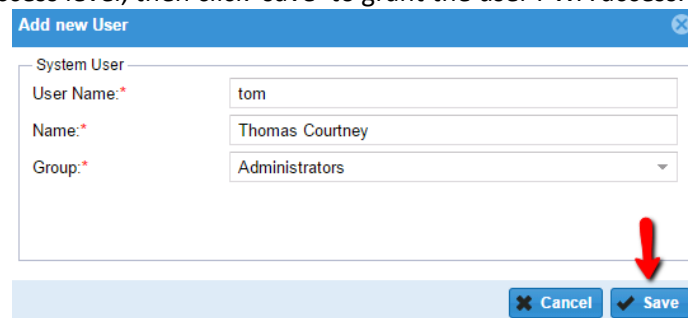
5.3.2 - PWA Web Based User Management

PWA Users can be managed directly in PWA. This is mostly for PWA Users given the User Managers Role. This can be done more efficiently by a server administrator in Pcontrol > Data Server > PWA Management as shown in 5.3.3.

- 1) Open PWA in a web browser (default URL when browsing from the server is <http://127.0.0.1:6442/pwa>) and click on 'Start' then 'System Settings'.
- 2) In the 'Security' tab of the window that opens, click 'Add' to specify a new user that can use PWA.



- 3) In the window that opens, type the name of a domain user. Use the 'Group' dropdown to specify their access level, then click 'save' to grant the user PWA access.



5.3.3 - PWA Management Overview

The PWA Settings Management Console allows administrators to quickly create, delete, and manage PWA users.

Once PWA Users have been created their PWA Group can be changed, and they can be further restricted by specifying a root OU level that they can view. This allows an administrator control over which Domain Users PWA cashiers can view.

To view the PWA Settings Management Console:

- 1) Open Pcontrol on the Pcounter Server and navigate to the Data Server bullet in Server Configuration.
- 2) Click on the blue text that says "Manage".

● Global Settings

● Printers

● Popup

● Data Server

● Database setup

● Services/Ports

● LPD Server

● Message Text

● Message Transport

● Real time monitor

● General

Data server: \\MAIZE

Pcounter share path: C:\PCOUNTER

Rename log files: Never

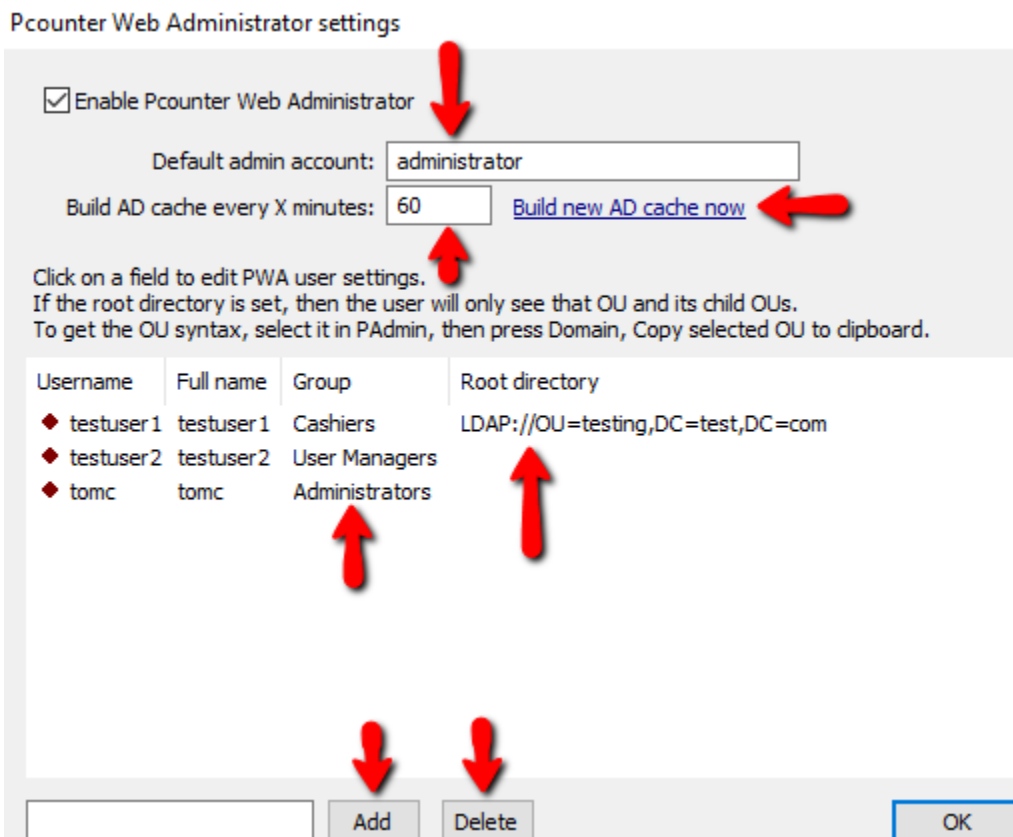
AD attribute for auto client code:

● Pcounter Web Administrator (PWA)

PWA uses the data server ports shown on the Ser
At first, only the Default Admin account can acces
accounts can be activated by pressing Manage be

[Manage](#)
<http://maize:6442/pwa>
[More information....](#)

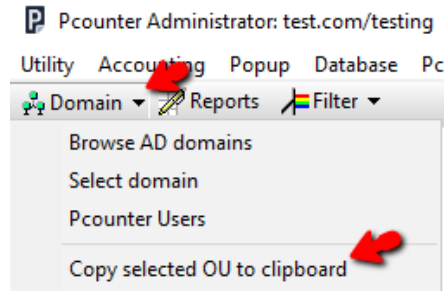
- 3) In the PWA Settings Management window there are options to:
- Change PWA's 'Default admin account'. This is the top-level, master account for PWA management.
 - Change the frequency which PWA will scan AD by changing the value 'Build AD cache after every X minutes'.
 - Start a new AD scan by clicking 'Build new AD cache now'. This may prevent cashiers from seeing users in PWA for a long time as PWA builds a new cache.
 - At the bottom there are buttons to Add new users to PWA and Delete existing users from PWA. Users not in the list will be unable to access PWA. By adding a user, they will be able to login to PWA.
 - Right clicking a user's Group column allows the user's PWA Group to be changed.
 - Left clicking a user's Root Directory column allows the root directory in AD that the user can view to be defined. This is used to restrict the users that PWA Cashiers can view.



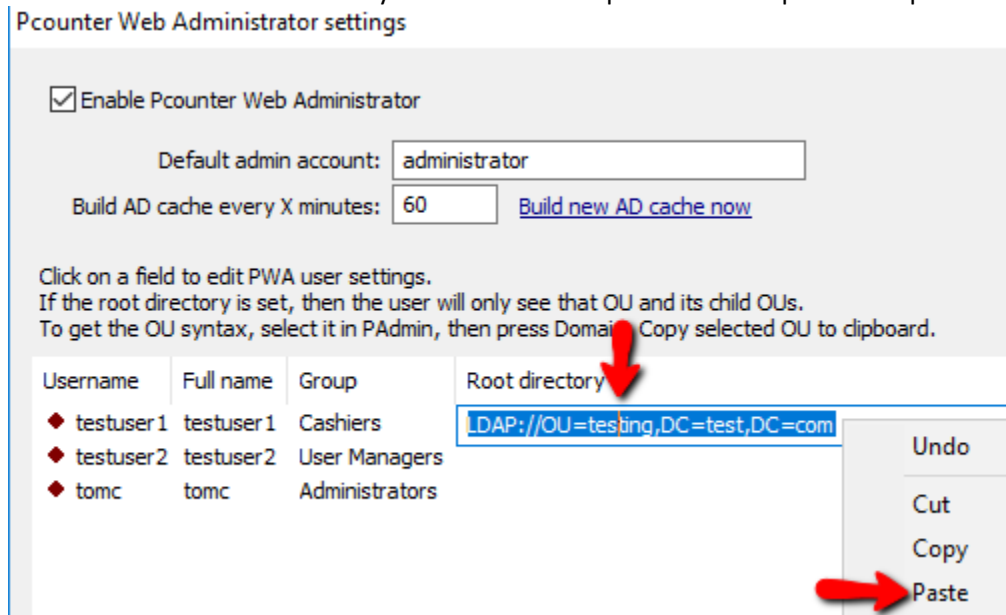
5.3.4 - PWA Management - Change Root OU

To change the root level OU a PWA Cashier can view:

- 1) First, obtain the LDAP path to the OU, to do so open Pcounter Administrator on the Pcounter server.
- 2) View the Domain, navigate to the OU that you wish to be the user's root level and left click it.
- 3) At the top of the Pcounter Administrator window click on the Domain dropdown and choose 'Copy selected OU to clipboard'.



- 4) Now, open Pcontrol on the Pcounter Server and navigate to the Data Server bullet in Server Configuration.
- 5) Click on the blue text that says "Manage" to open the PWA Settings Management console.
- 6) Left click the user's Root directory column and then paste in the copied LDAP path.



- 7) Repeat the process as needed. Click OK all are complete to close the PWA Settings window.
- 8) Restart the Pcounter Data Service to complete all changes.

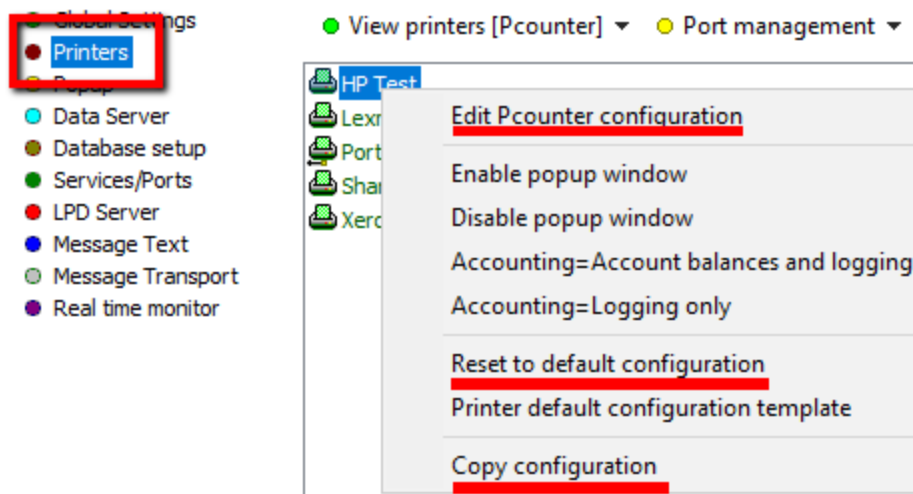
6.0.0 - Pcounter Printer Configuration Overview

In Pcontrol's printer's bullet, Pcounter Printers can be further configured beyond passive logging. Each printer in the Pcounter printers list has accounting settings, prices, rules, and policies that can be configured differently or identically per printer.

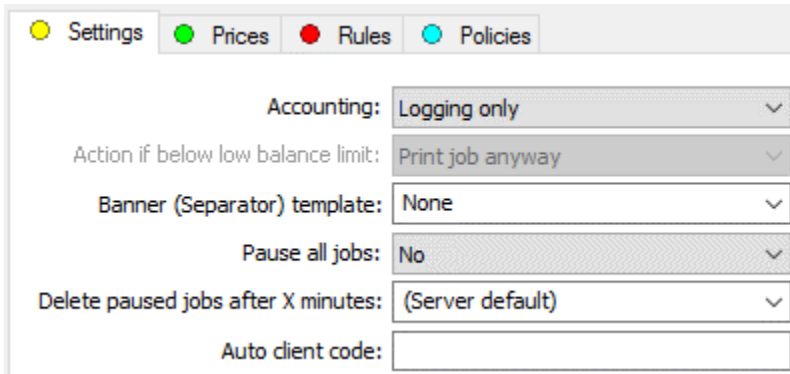
6.1.0 - Modifying Pcounter Printer Configuration

Right click any printer in the Pcounter Printer's list.

- Choose 'Edit Pcounter Configuration' to open the detailed configuration view.
- 'Reset to default configuration' uses the default configuration template as a base.
- 'Copy configuration' & 'paste configuration' allows copying and pasting of settings from one printer to another.



6.2.0 - Settings Tab



The screenshot shows a settings window with four tabs: Settings (selected), Prices, Rules, and Policies. Under the Settings tab, the following options are visible:

- Accounting: Logging only
- Action if below low balance limit: Print job anyway
- Banner (Separator) template: None
- Pause all jobs: No
- Delete paused jobs after X minutes: (Server default)
- Auto client code: (empty text box)

- **Accounting - Logging Only:** Logs all print usage but does not consider the job cost and/or user balance.
- **Accounting - User Account Balances and Log File:** Logs all print usage, and actively considers the job cost and user balance.
- **Action If Below Low Balance Limit - Print Job Anyway:** This accounting setting will not stop a user from printing at any point. This setting will allow users to print indefinitely with regards to user balance.
- **Action If Below Low Balance Limit - Delete Job & Pause Job:** This accounting setting will stop a user's print jobs when their user balance reaches a certain point. The jobs will be paused or deleted based on the setting chosen
- **Delete Jobs After...:** This setting overrides the 'Delete Jobs After...' setting in Pcontrol>Global if a numerical value is specified. To use the value set globally, set to '(Server Default)'.

6.2.0 - Settings Tab - Continued

The screenshot shows the 'Settings' tab in the Pcounter for Windows 2.x application. The interface includes a navigation bar with tabs for 'Settings' (selected), 'Prices', 'Rules', and 'Policies'. Below the navigation bar, several configuration options are listed as dropdown menus or text boxes:

- Accounting: Logging only
- Action if below low balance limit: Print job anyway
- Banner (Separator) template: None
- Pause all jobs: No
- Delete paused jobs after X minutes: (Server default)
- Auto client code: (empty text box)

A red rectangular box highlights a section titled 'Workstation popup, Webdient, Print job release'. This section contains five checkboxes and a link:

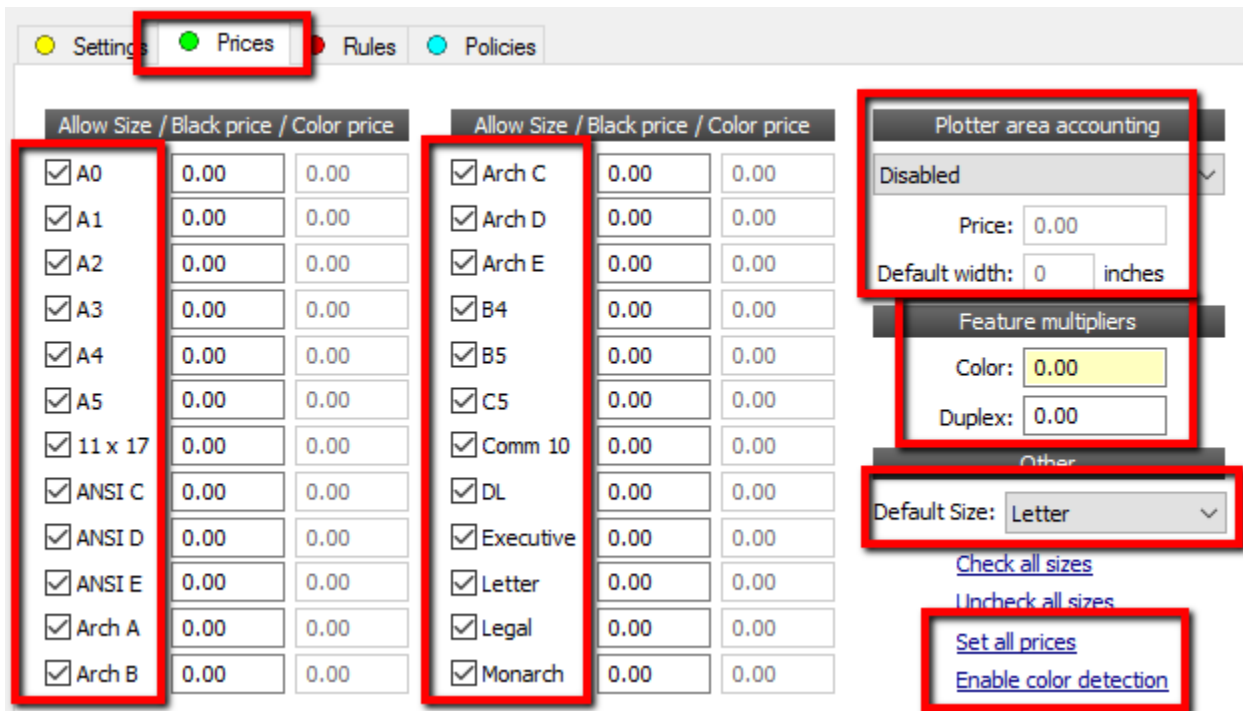
- Enable popup, print release, etc. (Jobs are paused)
- Count jobs in advance for display
- Disable delegate print release
- Keep job paused after popup
- Skip popup/pause if job is not color

To the right of the 'Keep job paused after popup' checkbox is a blue link labeled 'Edit information message'.

- **Enable Popup, Print Release:** This setting automatically pauses all received jobs so that a Pcounter Popup can be displayed to the user, or so the job can be held for print release.
- **Count Jobs in Advance for Display:** This setting ensures that jobs are counted before they are print, are paused, etc.
- **Keep Job Paused After Popup:** This setting keeps a job paused after popup for print release. Used for when print release and Popup are both required. The option is only available when Popup is enabled.
- **Edit Information Message:** If Pcontrol>Popup>'Information Message Type' is set to 'Individual Printers', this is where printer specific information messages are defined. If Pcontrol>Popup>'Information Message Type' is set to 'All Printers', the message defined here is ignored.

6.3.0 - Prices Tab

All print pricing is defined in the prices tab for each printer.



- **Plotter Area Accounting:** Used to for wide format print accounting, price is defined per linear/square foot/meter.
- **Duplex Feature Multiplier:** Used to change prices based on duplex usage. To give a 50% discount for duplex usage, set to 0.5.
- **Default Size:** Set accordingly for the region.
- **Set All Prices:** Use to quickly and identically set all prices for all paper sizes.
- **Enable Color Detection:** Enable on color printers to ensure color page counts are distinguished from BW page counts. Also allows for unique prices to be set for color and BW.

6.4.0 - Rules

6.4.1 - Global Rules

Rules can be defined globally in Pcontrol>Global Settings>Default Printer Template/Global Rules & Policies. Global rules are processed before per printer rules.

Global Settings ←

- Printers
- Popup
- Data Server
- Database setup
- Services/Ports
- LPD Server
- Message Text
- Message Transport
- Real time monitor

• Get user information from

Primary Domain Controller

Other server: ←

Local domain or directory (preferred) [Manage trusts](#)

Additional domain or server: ←

Login name for remote server:

Password for remote server: ←

Validate client passwords from external LDAP server

• Other settings

Data Server: ←

Numerical format for prices/costs: Decimal digits:

[Delete paused jobs after](#) minutes

Maximum job move rules:

Log rejected jobs

→ [Default printer template/Global rules & policies](#)

[Registration and trial period](#)

[Export settings to another server](#)

6.4.2 - Rules Tab (Per Printer Rules)

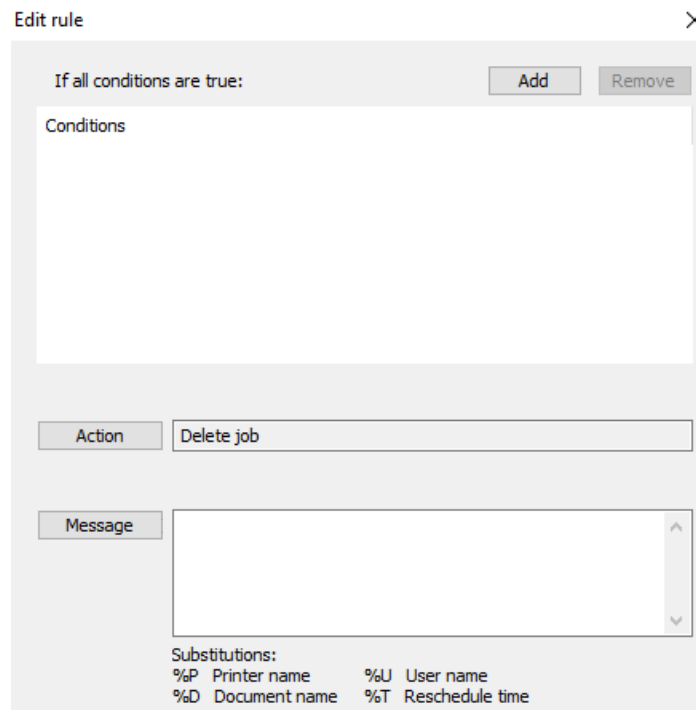
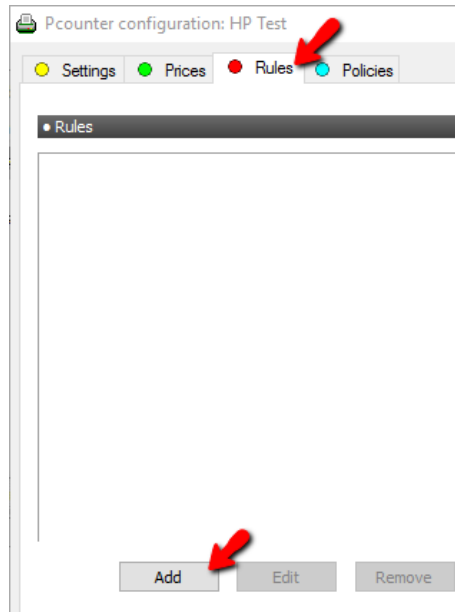
Use this tab to define actions to take effect based on defined criteria, per printer.

Per printer rules are proceed after global rules.

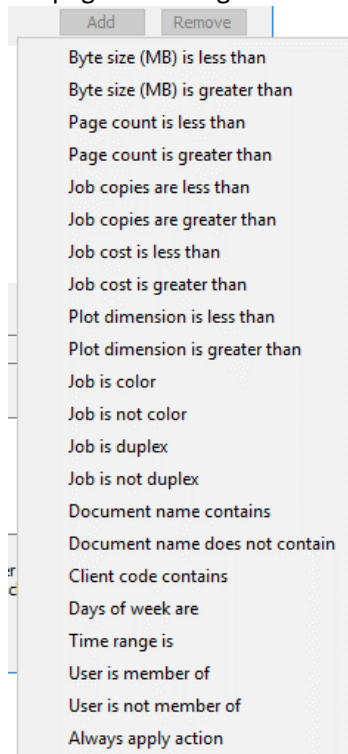
Such as, 'If page count is greater than 100 pages, delete the job'.

NOTE. Jobs may only be moved two times by default, which prevents jobs from indefinitely moving back and forth between printers. To change this behavior, adjust the 'Maximum move job rules' in Pcontrol's Global Settings.

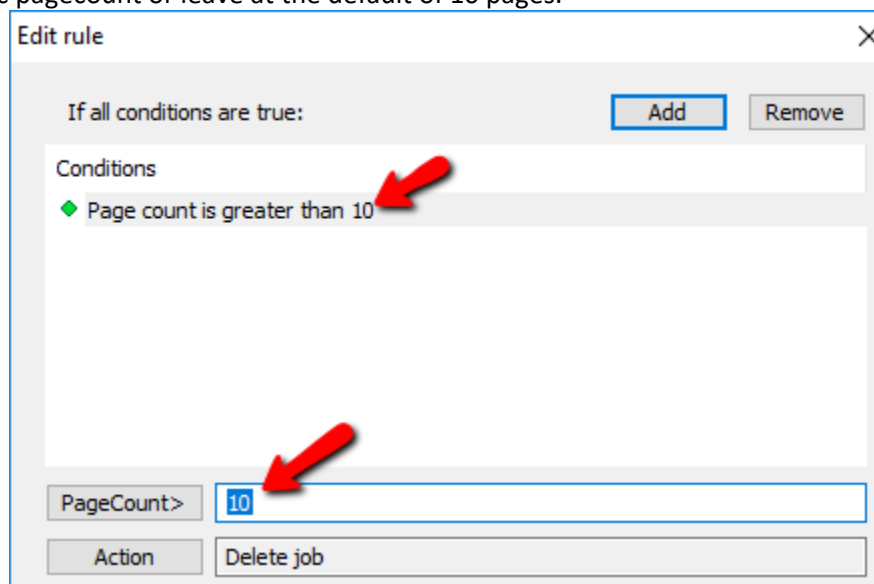
- 1) Once in the Rules tab, click the 'add' button and the rule create/edit will open.



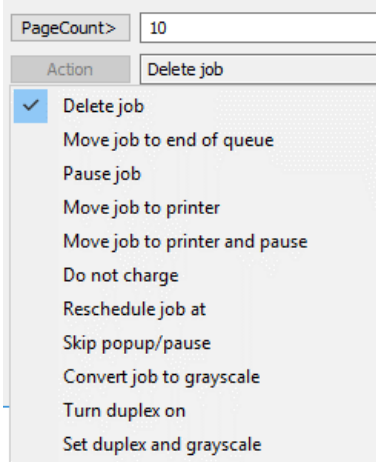
- 2) Click 'add' at the top to add a 'rule condition', then select a condition from the list of conditions. For our example, we will choose 'page count is greater than'.



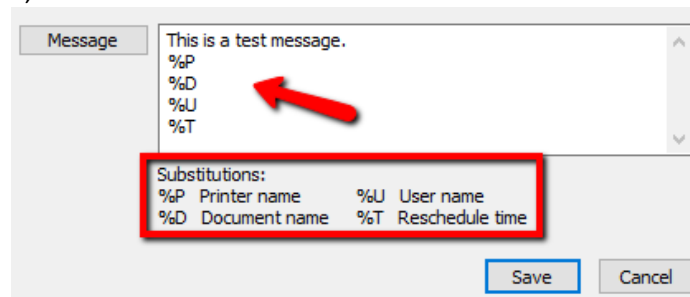
- 3) Once a condition is added, it will be populated in the conditions list and there may be additional values to adjust at that point. For our example we chose 'page count is greater than'. Once in the list we can then choose a specific pagecount or leave at the default of 10 pages.



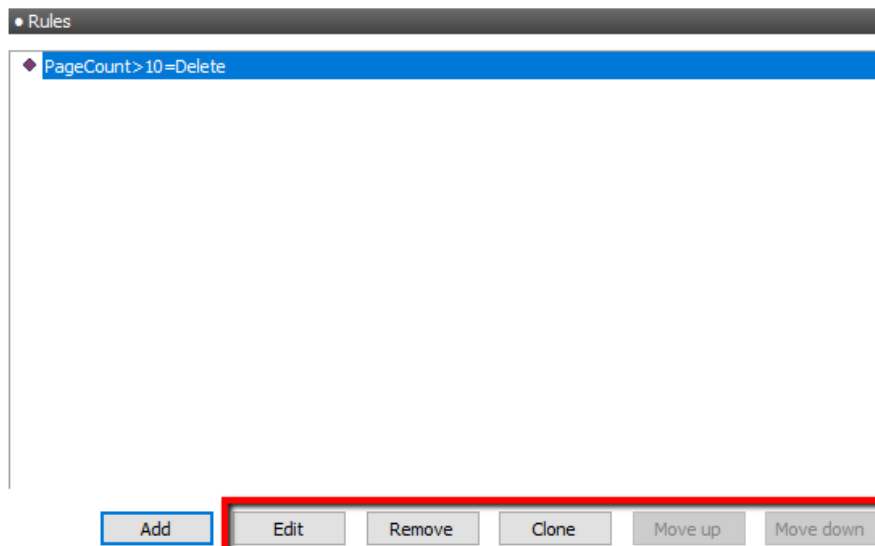
- 4) Once conditions are set, an action must be defined. Click the action button to view all available actions, then select or leave at the default.



- 5) A custom message can be configured as well. This is the message the user will see when the rule takes effect. Use the substitutions to customize the message based on the user, printer, document name, and reschedule time.

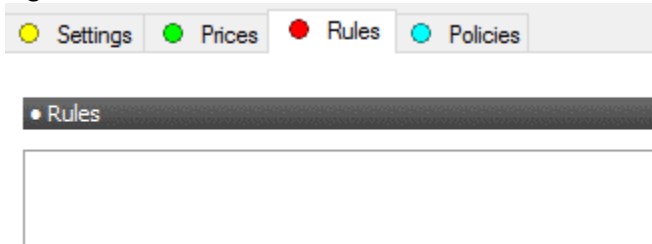


- 6) Once the settings for the new rule have been configured, click OK to add the rule. It will now display in the rules tab.
- 7) Click on any existing rules in rules tab enables edit, remove, and clone. Also, if multiple rules are present, move up and move down. Multiple rules process in order from top to bottom.

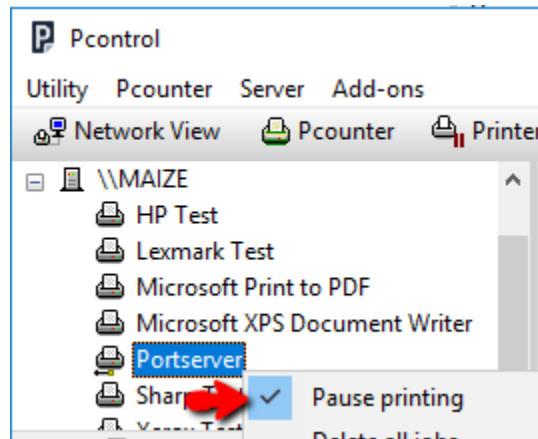


6.4.3 - Testing Rules

- 1) Go to the default printer template and confirm no rules are set.
e.g.

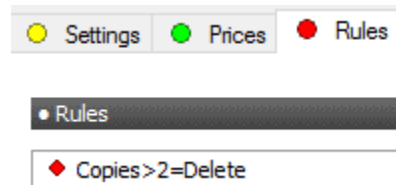


- 2) Choose one printer for testing and pause it in Pcontrol.
e.g.

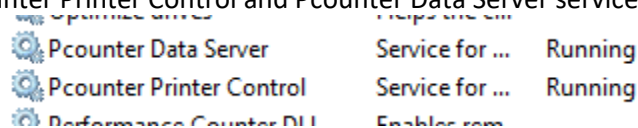


- 3) Open the test printer's Pcounter configuration and check the box for 'count jobs in advance for display' in the settings tab, then in the rules tab create a rule that says Copies>2=Delete. Then click OK to close the window.

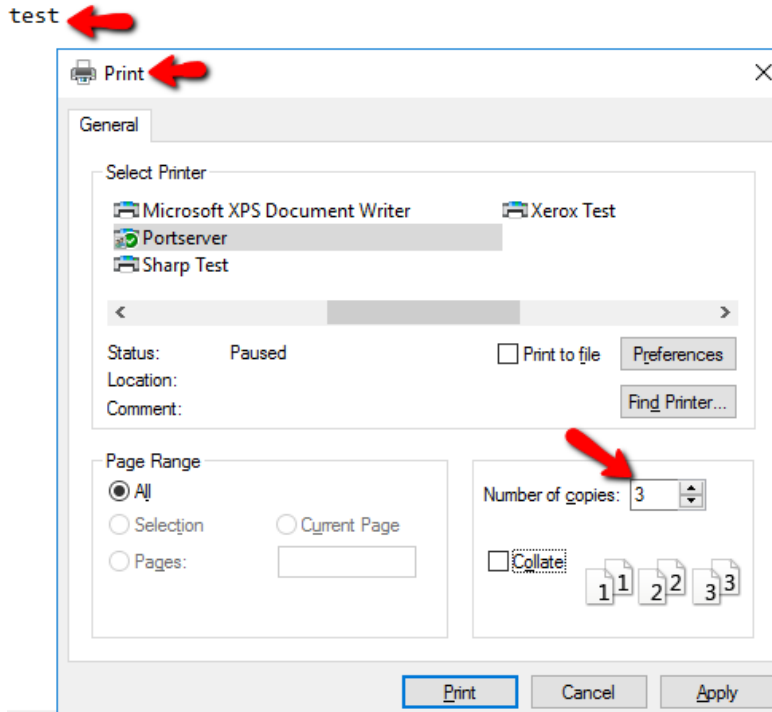
e.g.



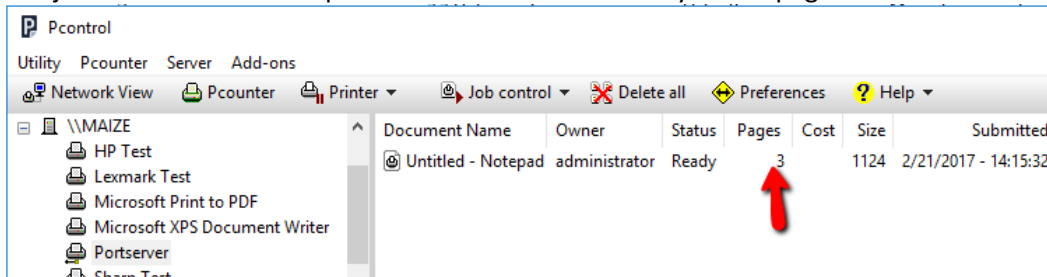
- 4) **Restart** the Pcounter Printer Control and Pcounter Data Server services.



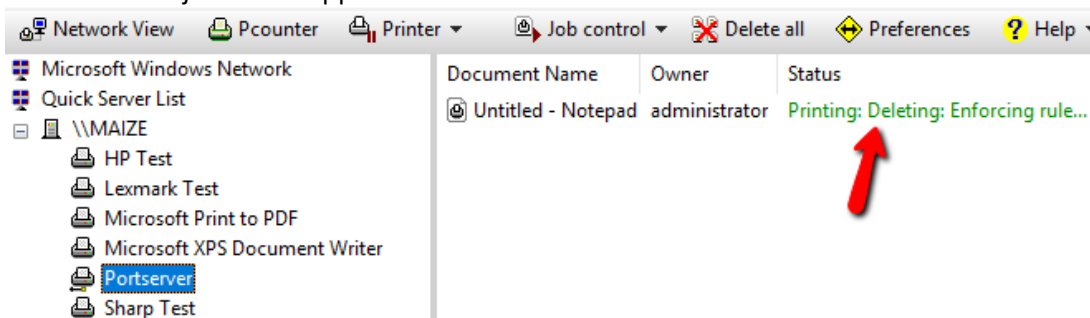
- 5) Open notepad and type something in the document as it cannot be blank.
 - 6) Open the print menu, set copies to 3, and click Print.
- e.g.



- 7) The job will be held in the queue with the status of 'ready' and a page count of 3.



- 8) Unpause the queue via Pcontrol, the job status should change to 'printing: deleting: enforcing rule' and the job will disappear.



6.5.0 - Policies Tab

Use the Policies tab to force duplex, grayscale, or to deny access to a printer to specific Pcounter Users, Active Directory users, Active Directory users based on group membership, or document names.

NOTE. It is possible to apply a policy to all jobs by specifying the user name as *(asterisk).

NOTE. It is also possible to apply global policies to all printers by specifying policies in the server default printer configuration template.

The screenshot shows a software interface with a top navigation bar containing four tabs: 'Settings' (yellow dot), 'Prices' (green dot), 'Rules' (red dot), and 'Policies' (cyan dot). The 'Policies' tab is selected and highlighted with a red box. Below the tabs, a dark gray header bar contains the word 'Policies' with a small dot to its left. Underneath, a white area contains three radio button options: 'Turn duplex on' (selected, with a black dot), 'Color to gray', and 'Deny access'. This row of options is also highlighted with a red box. Below these options, there are three vertical lines extending downwards. At the bottom of the interface, there is a white text input field with a blue border, followed by three buttons: 'Add user', 'Add group', and 'Add document'. This entire bottom section is highlighted with a red box.

7.0.0 - Pcounter Client Overview

For a detailed PPopup video walkthrough, please consult our PPopup Training Video online at: <https://youtu.be/chSbuDZJhQ>

PPopup can display in English, French, French Canadian, German, Spanish, Portuguese, Italian, Finnish, Dutch, Swedish, Czech, Danish, Polish, Norwegian, and Simplified Chinese.

7.1.0 - PPopup and PcounterClient Differences

Features and Functionality

PPopup and PcounterClient have identical features.

PPopup may not receive notification messages across subnets.

PcounterClient receives notification messages regardless of location.

Network communication

PPopup uses SMB and should not require any specific external routing or firewall configuration.

PcounterClient uses TCP/IP and requires multiple IP ports for client/server communication.

Terminal sessions

PPopup is recommended for use in terminal sessions. Each session must have a unique logon user name, or else popups will occur in multiple sessions.

Non-domain computers

PcounterClient is recommended for use on non-domain computers.

Pcounter 2.x Database & File Access

PPopup.exe and PcounterClient.exe both read client codes and client code associations from the Pcounter Share.

Notification messages

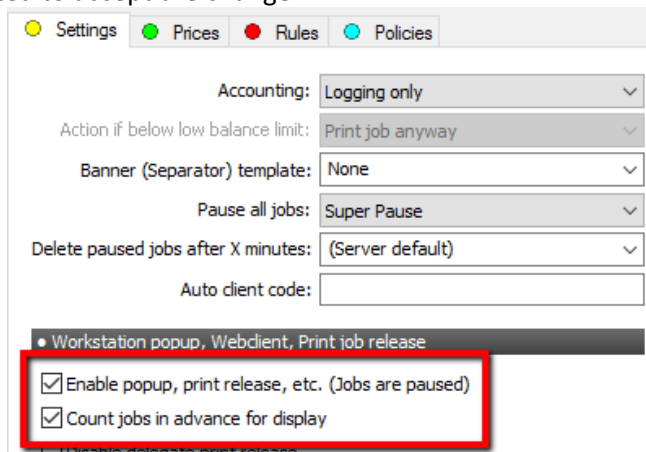
7.2.0 - Popup Enablement

NOTE. Do not enable Popup on a production printer until the Popup client has been distributed to all clients in the environment. All jobs will pause the moment Popup is enabled on a print queue, pending a response from the Popup client on the workstation.

If the client is missing, the user will not be able to print to a Popup enabled printer.

To enable Popup on a Pcounter printer, open the printer's Pcounter configuration window, then check the box for '**Enable Popup, print release, etc.**' and '**Count jobs in advance for display**'.

Press OK to accept the change and a prompt will be displayed asking if the Pcounter Printer Control Service should be restarted to accept the change.



7.3.0 - PcounterClient.ini

PcounterClient.ini is used to configure PPopup.exe and PcounterClient.exe with additional settings. Once the PcounterClient.ini is created, it can be imported into the .exe before distribution.

7.3.1 - [Preferences] section

PollTime=X	The server poll time will be set to X seconds. (Default 3 seconds)
Bounce=X	PPopup will restart itself every X minutes. (Default 0 = disabled)
HTTPSPort=X	Port on which popup server listens (PcounterClient.exe only, Default 443)
ProcessMultipleJobs=1	The local setting Process multiple jobs is enabled. (Default 0)
MatchUserName=1	The local setting Match Username on job is enabled. (Default 0)
Hidelcon=1	PPopup runs hidden, without an icon. (Default 0)
NoExit=1	PPopup runs with the Exit option disabled on its popup menu. (Default 0)
Center=1	The popup window will always be placed in the center of the display. (Default 0)
MsgBoxNotify=1	Notifications are shown in a message box dialog instead a tray balloon.
Delay=X	PPopup will delay loading for X seconds. This is useful if the system is not initialized when PPopup runs. (Default 0)
ClearUserName=1	If the popup window type is ID and Password, then the user name field will be cleared before each prompt. (Default 0)
BroadcastOnly=1	PPopup should only receive broadcast messages, no popups for print jobs. (Default 0)
ShowPopupOnSingleCode=1	If client code associations are used and user has only one code assigned, popup window will be shown. (Default 0)
MaxAutoReply=X	The maximum value for users to auto respond to popups will be X minutes.
NDSID=1	PPopup should set the job owner on all popup print jobs to the locally logged in NDS/eDirectory name. The Novell Client is required for this feature. (Default 0)
AutoNDS=1	Similar to NDSID above, except that the job owner is automatically changed to the locally logged in NDS name without prompting.
Session=1	Will ask for name/password from the start and keep it for the client session. Useful to be used with window types such as Client code list and Entry form.
DisableMessaging=1	Disables reception of broadcast messages. (Default 0)
ConfigProfile=profileName	PPopup uses the configuration profile specified by profileName. This option is not required to use the default configuration profile.
IdleCancel=X	If PPopup receives no response in X seconds, it automatically cancels the job. (Default 300 seconds)
Preload=serverName	PPopup reads its configuration from serverName and loads the client code database if necessary. Normally these operations are not performed until the first print job, and there may be somewhat of a delay (after the first print job) due to the time it takes to read the client database. This option can save time by preloading large databases so that the popup response is fast for the first print job.
InputLength=X	If the popup window type is ID and Password, then this specifies the minimum length required for input to each field. (Default 0 = disabled)
CustomDLL=path	If a custom DLL is being used, enter the path here.
DocNameJobID=1	If the popup window type is ID and Password using a Job ID option, then for sites that want the document name obscured at the release station, this option will set the document name to the job ID number when the user answers the popup. (Default 0, disabled)
LockUserName=1	If the popup window type is ID and Password, and the Job ID option is set to Use Computer Name as ID, then the username field will be set to the computer name and always locked so that it can't be changed, and the keyboard focus set to the password field. So instead of using the Pcounter Station "Display computer names instead of user names", the user name field will show the computer name and print job passwords can be used. (Default 0 = disabled)
Session=1	The client will ask for a username/password in advance and use this to set the job owner of subsequent print jobs to this username. This option will persist until the client logs out or the client software is restarted. It is useful in situations where an alternative username is needed with a client code list, for example. Also used to enforce client code associations with Popup.

7.3.2 - [Servers] section

Typically, PPopup will automatically detect any “print servers” to which the workstation is connected and include them in the job-checking cycle. However, this may include non-Pcounter servers and even NetBIOS-aware printers that have built-in Windows sharing. Multiple entries can optionally be added to this section to handle “print servers” appropriately.

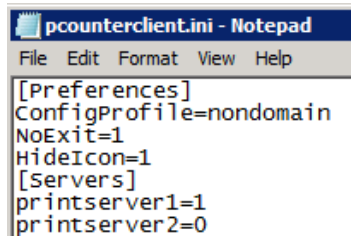
Adding ServerName=1 ensures that PPopup will check that server for print jobs.

Adding ServerName=0 ensures that PPopup will ignore the server entirely.

7.3.3 - PcounterClient.ini Example

The following PcounterClient.ini example does the following:

- Defines a special Popup profile to be used named ‘nondomain’.
- Disables the ‘exit’ option in the Popup context menu, which prevents the user from exiting.
- Hides the Popup icon so the user does not see it in the system tray.
- Forces a connection to the server ‘printserver1’
- Ignores the server ‘printserver2’.



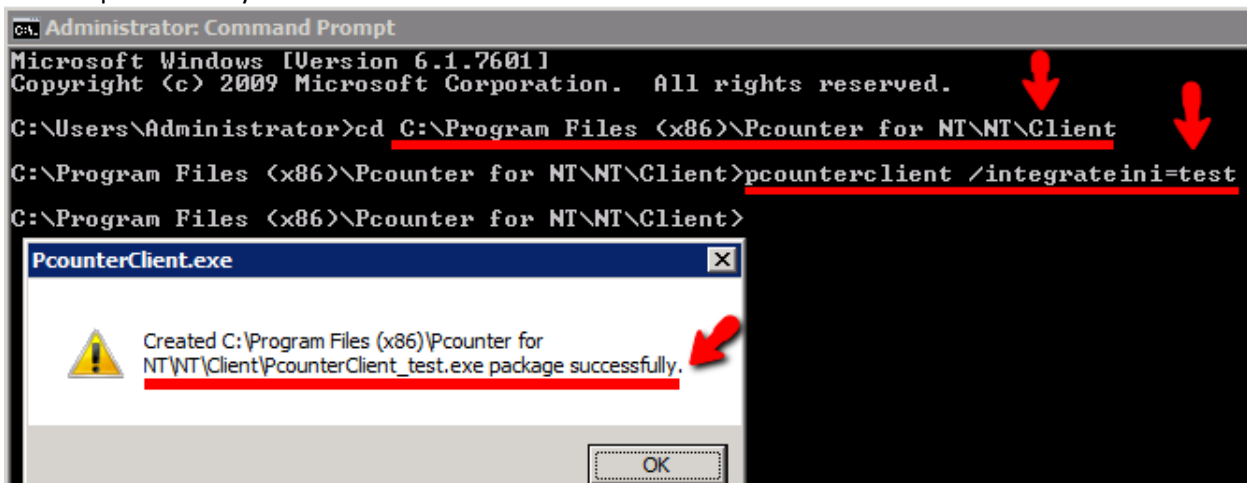
```
pcounterclient.ini - Notepad
File Edit Format View Help
[Preferences]
ConfigProfile=nondomain
NoExit=1
HideIcon=1
[Servers]
printserver1=1
printserver2=0
```

7.3.4 - PcounterClient.exe /integrateini= Command

To integrate the PcounterClient.ini options into the client .exe, use the following process:

NOTE. The /integrateini command works with both PPopup.exe and PcounterClient.exe.

- 1) Choose either PPopup.exe or PcounterClient.exe.
- 2) Create a PcounterClient.ini and set all options exactly as needed. Test to ensure the options work as expected as they cannot be changed after integration.
- 3) Place the PcounterClient.ini in the same directory as the chosen client .exe.
- 4) Open a command prompt and change directory to where the .exe and .ini are located.
- 5) Run the command ‘PPopup /integrateini=test’
- 6) This will create a new PPopup.exe with _Test in the file name. The ini settings will be integrated permanently into the .exe for distribution.



7.4.0 - Pcounter Popup Client Distribution

NOTE. The Popup Client .exe must be located on the user workstation before launching.
The .exe cannot be launched from a network location.

Once a Popup client type has been chosen, and options have been integrated via the /integrateini command, the client .exe is ready to be distributed to workstations.

Distributing Pcounter Client In Domain Environment: For information on distributing the Pcounter's Popup Clients to workstations joined to a Window's domain, please consult our Pcounter Distribution Guide online at: http://apps.pcounter.com/docs/pcounter_distribution_guide.pdf

Workgroup Environment: For information on distributing the Pcounter's Popup Clients to workstations in a workgroup environment, please consult our Pcounter Distribution Guide online at: http://apps.pcounter.com/docs/pcounter_distribution_guide.pdf

7.5.0 - Custom Icon

It is possible to substitute a custom icon by renaming the icon file to PPopup.ICO and keeping it in the same directory as PPopup.exe. Maximum resolution for the .ico file is 256x256.

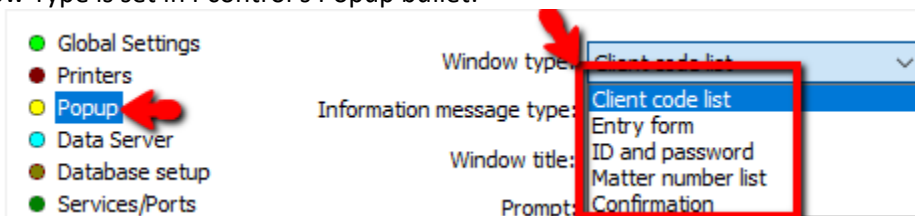
If PPopup has been configured to use an information message, then the default icon will also be displayed in the popup window.

7.6.0 - Popup Window Types

The Pcounter Popup window type defines what type of Popup is displayed to the user.

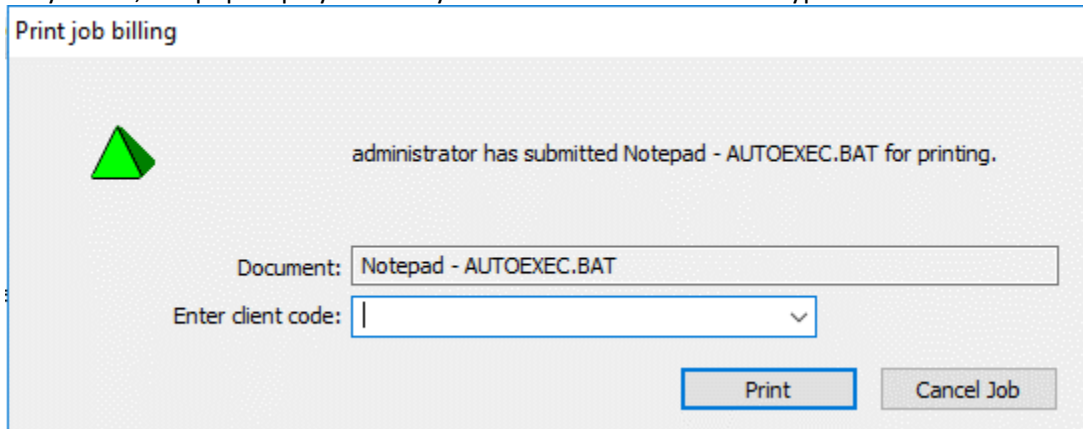
NOTE. Changes to the Popup Window Type require a restart of the Pcounter Printer Control service and the Popup Client running on the user workstation to take effect.

Popup Window Type is set in Pcontrol's Popup bullet:



7.6.1 - Window type: Entry form

With 'Entry Form', PPopup displays an entry form field where users can type in a client code.

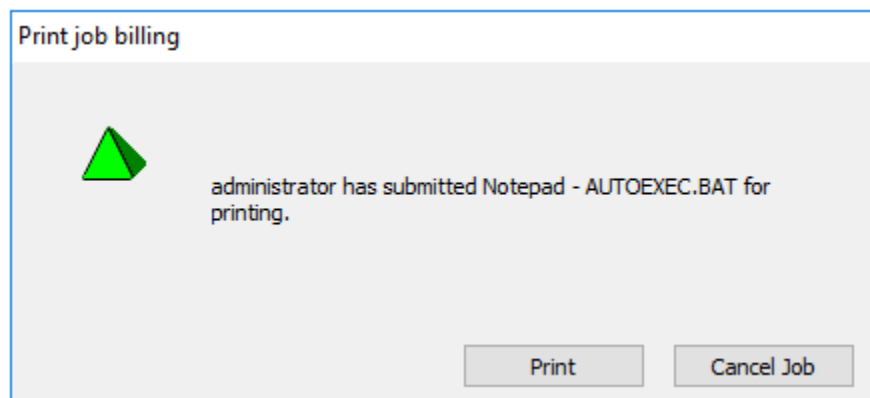


General Options:

- **Verify entry in client code database: No** = users can type in anything they want. **Normal** = force users to validate a client code from PPopup.dbf. **Display as password** = Same as Normal, except hidden like a password
- **Remember previous selections:** PPopup can remember previous selections for user convenience. However, if it is required that users enter a new client code for each print job, then PPopup will clear the entry field each time.
- **Allow non-chargeable jobs:** If some jobs require logging of client codes but not charging, users can be allowed to specify that individual jobs will not be charged. If a job is marked as non-billable, the cost field of PCOUNTER.LOG will be set to zero for the job, but the features field will contain an entry /NB=x, where x=the real cost of the job.
- **Allow subcode form:** When this feature is enabled then the subcode field is available for users to type in any notes they please.

7.6.2 - Window type: Confirmation

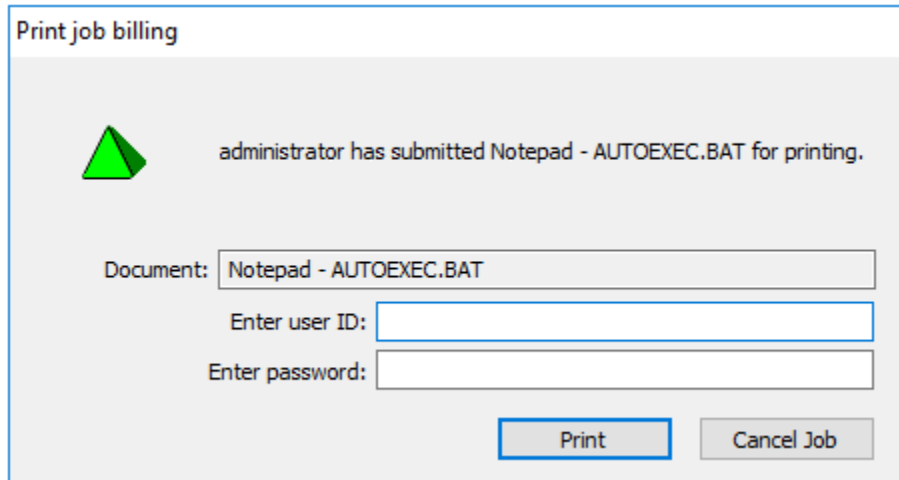
The Confirmation window type does not require any input from the user, other than whether they want the job to print. This is useful in situations where users may need to be reminded of their balance and/or the cost of the job before they allow the job to print



7.6.3 - Window type: ID and password

'ID and Password' is commonly used for:

- General print job authentication.
- Changing the owner of a print job for print release purposes.
- Identifying print jobs on a shared logon workstation.



ID/Password Authentication Options:

- **Pcounter Users only:** Passwords will only be checked from the shared logon Pcounter Users database. Jobs are deleted after 3 incorrect attempts. The print job owner name will be set to *username after a PPopup logon is successful. This allows Pcounter to determine that the job owner is a Pcounter User and not a standard domain user.
- **Pcounter Users and domain passwords:** Passwords will be checked from the domain and the shared logon Pcounter Users database. Jobs are deleted after 3 incorrect attempts.
- **Job ID - No job password:** Changes the print job owner name for visual identification only. This is intended for use with Pcounter Station or for situations where users are sharing login accounts and additional information for identifying print jobs is required.
- **Job ID - Job password optional:** Same as Job ID but with an optional password prompt.
- **Job ID - Job password required:** If used with Pcounter Station, then this password will be required to release the job for printing.

General Options:

- **Show confirmation after login:** This feature will display a second window after the authentication is accepted. This allows a confirmation message to be shown displaying user-specific values such as account balance and free quota in addition to cost. (Normally these would be unknown prior to the users identifying themselves.)
- **Allow client code form:** When enabled, users can manually enter text which will be recorded in the client code field of the PCOUNTER.LOG file. No validation will be made from the PPopup.DBF database and there are no restrictions on text entered here.
- **Local login username only:** If this box is checked, then only the password of the user who is logged on to the workstation will be accepted.

7.6.4 - Window Type: Client Code List

With 'Client Code List', users can choose from a pre-configured single tier of client codes. Each client code may also have a description which is also displayed. Client codes can be used to represent clients, projects, and departments. Client code information is kept in \\DataServer\Pcounter\PPopup.DBF and is managed using Pcounter Administrator. Users should have Read permission to this path.

When this window type is displayed to the user, they can double-click to choose a client code, type a code into the entry form, or search for a code with the search button.

Client code	Description
ClientCode01	ClientCode01 Description
ClientCode02	ClientCode02 Description
ClientCode03	ClientCode03 Description
ClientCode04	ClientCode04 Description
ClientCode05	ClientCode05 Description
ClientCode06	ClientCode06 Description
ClientCode07	ClientCode07 Description
ClientCode08	ClientCode08 Description
ClientCode09	ClientCode09 Description
ClientCode10	ClientCode10 Description
ClientCode11	ClientCode11 Description
ClientCode12	ClientCode12 Description
ClientCode13	ClientCode13 Description
ClientCode14	ClientCode14 Description
ClientCode15	ClientCode15 Description

General Options:

- **Client code only from list:** If this box is checked, then users must select a client code from the list, otherwise they can either select a code from the list or type in a code manually.
- **Associate client codes with network user and group names:** This feature allows different client code lists to be displayed for separate groups and/or users. Users will only see client codes which are associated with network groups to which they belong or are associated with their logon name.
- **Remember previous selections:** PPopup can remember previous selections for user convenience. However, if it is required that users enter a new client code for each print job, then PPopup will clear the entry field each time.
- **Allow non-chargeable jobs:** If some jobs require logging of client codes but not charging, users can be allowed to specify that individual jobs will not be charged. If a job is marked as non-billable, the cost field of PCOUNTER.LOG will be set to zero for the job, but the features field will contain an entry /NB=x where x=the real cost of the job.
- **Allow subcode form:** When this feature is enabled then the subcode field is available for users to type in any notes they please.
- **Allow auto-respond:** This feature allows users to have PPopup set client codes on print jobs automatically for a specified time period.

7.6.5 - Window type: Matter Number List

This is like the client code list, but with a two-tiered database. Each client code can have an associated list of subcodes (matter numbers). When users select a client code, the relevant subcodes are displayed. Each client code and subcode may also have a description which is also displayed.

When this window type is displayed, the user can double-click to choose a client code, type a code into the entry form, or search for a code with the search button.

Print job billing

administrator has submitted Notepad - AUTOEXEC.BAT for printing.

Document: Notepad - AUTOEXEC.BAT

Enter client code: ClientCode01 / CC01Sub01

Client code	Description
ClientCode01	ClientCode01 Description
ClientCode02	ClientCode02 Description
ClientCode03	ClientCode03 Description
ClientCode04	ClientCode04 Description
ClientCode05	ClientCode05 Description
ClientCode06	ClientCode06 Description

Matter number	Description
CC01Sub01	CC01Sub01 Description
CC01Sub02	CC01Sub02 Description
CC01Sub03	CC01Sub03 Description
CC01Sub04	CC01Sub04 Description
CC01Sub05	CC01Sub05 Description
CC01Sub06	CC01Sub06 Description
CC01Sub07	CC01Sub07 Description

Print Cancel Job Reload Client List Search

General Options:

- **Client code only from list:** If this box is checked, then users must select a client code from the list, otherwise they can either select a code from the list or type in a code manually.
- **Subcode only from list:** If this box is checked, then users must select a subcode from the list, otherwise they can either select a code from the list or type in a code manually.
- **Associate client codes with network user and group names:** This feature allows different client code lists to be displayed for separate groups and/or users. Users will only see client codes which are associated with network groups to which they belong or are associated with their logon name.
- **Remember previous selections:** PPopup can remember previous selections for user convenience. However, if it is required that users enter a new client code for each print job, then PPopup will clear the entry field each time.
- **Allow non-chargeable jobs:** If some jobs require logging of client codes but not charging, users can be allowed to specify that individual jobs will not be charged. If a job is marked as non-billable, the cost field of PCOUNTER.LOG will be set to zero for the job, but the features field will contain an entry /NB=x where x=the real cost of the job.
- **Allow auto-respond:** This feature allows users to have PPopup set client codes on print jobs automatically, based on the most recent input made in the PPopup window, for a specified period of time. If a user wishes to cancel auto-respond after it has been set, then it can be disabled in PPopup Preferences.

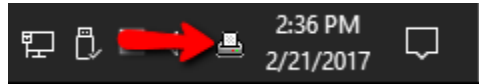
7.7.0 - Popup Troubleshooting

7.7.1 - Popup Testing Procedure

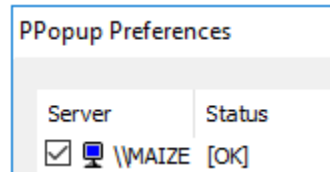
When testing Popup, start testing at the server, then move on to workstations of each environment.

The following is the standard Popup test procedure:

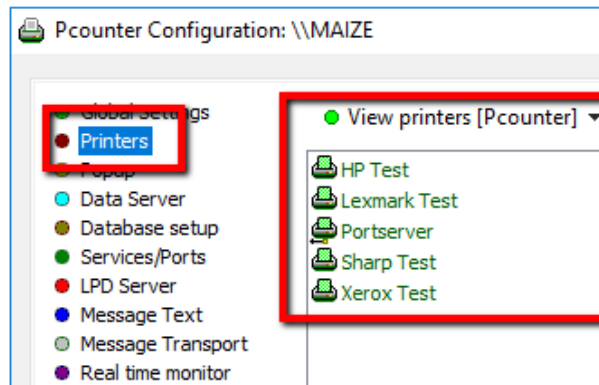
- 1) Launch the client.exe, either PPopup.exe or PcounterClient.exe, and ensure it displays the Popup icon in the taskbar.



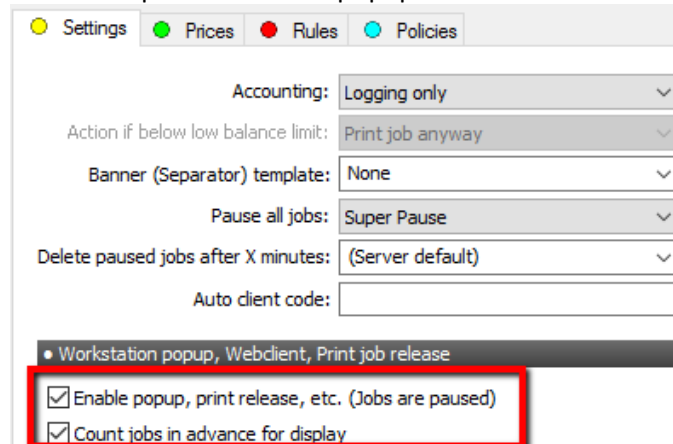
- 2) Confirm the client has a good server connection by right clicking the icon in the taskbar and choosing 'Preferences'. The Pcounter server should be listed and the status should be 'OK'.



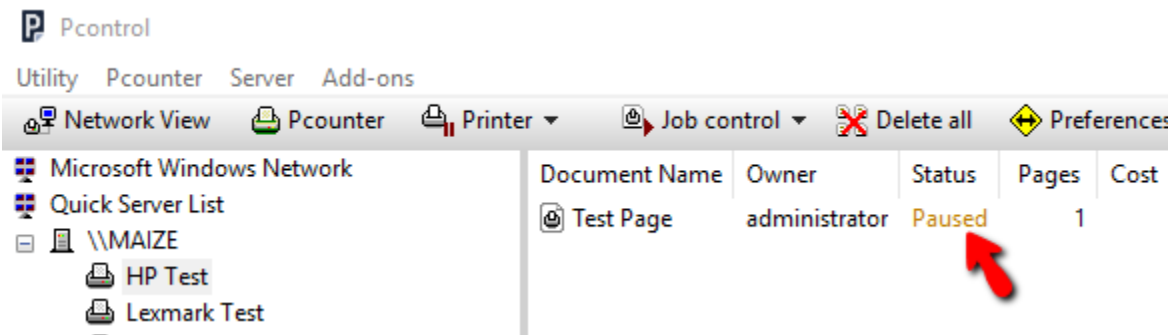
- 3) Confirm the print queue being tested is using a Pcounter Port. Open Pcontrol and browse to Pcounter>Configure Pcounter Server>Printers. Confirm the print queue being tested is in green text.



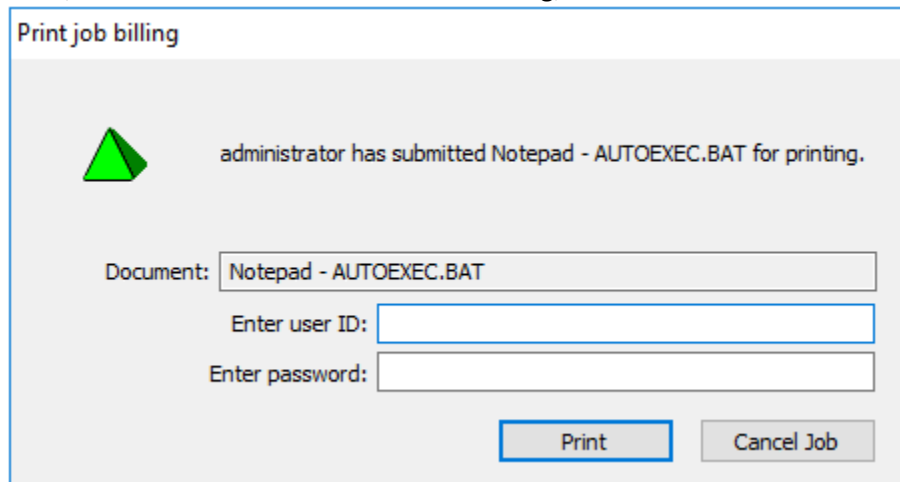
- 4) To confirm Popup is enabled on the print queue being tested, double click the printer from the Pcounter Printers list in step 3. The 'enable popup ...' box should be checked.



- 5) Submit a print job to the test queue that has been verified to be using a Pcounter Port and Popup enablement. The job should arrive in the server's print queue with a job status of paused.



- 6) If all is well and performed properly, the Popup message should be displayed shortly after job submission, wherever the Pcounter Client is running, either server or workstation.

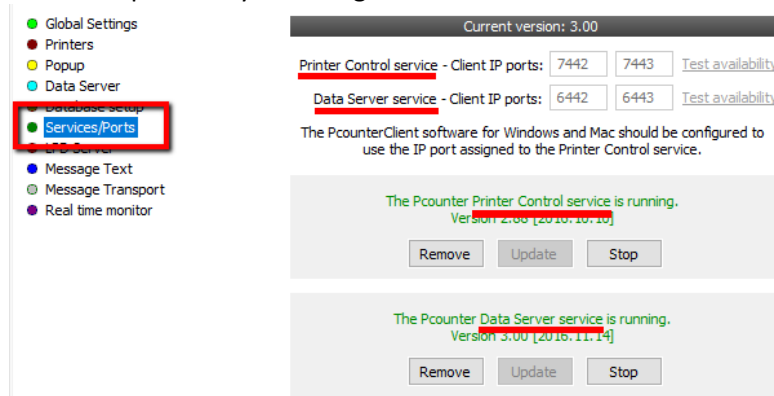


7.7.2 - Test Client TCP Port Connections

PcounterClient.exe and “.dmg uses four TCP ports to communicate between the server and workstation. All four ports must be open between the server and workstation or the Popup will not display.

Use the following procedure to test each of the four ports between the server and a workstation:

- 1) Ensure the Pcounter Printer Control service and Pcounter Data Server service are both running and make note of the ports they are using.



- 2) On a test workstation, open a web browser and type the following path, replacing 'yourserver' with the IP address of the Pcounter server:

<https://yourserver:7443/PcounterClient?api=Version>
<https://127.0.0.1:7443/PcounterClient?api=Version>

- 3) If the connection is good, version info will be displayed.



```
<?xml version="1.0" encoding="UTF-8"?>
- <Version>
  <ReturnValue>True</ReturnValue>
  <ProductVersion>2.88</ProductVersion>
  <FileVersion>2016.10.10</FileVersion>
</Version>
```

- 4) If the connection is not good, an error may be displayed, such as 'page cannot be displayed'.

This page can't be displayed

- Make sure the web address https://valencia:7444 is correct.
- Look for the page with your search engine.
- Refresh the page in a few minutes.

- 5) Repeat the test with each port.

<https://yourserver:7443/PcounterClient?api=Version>
<http://yourserver:7442/PcounterClient?api=Version>
<https://yourserver:6443/PcounterClient?api=Version>
<http://yourserver:6442/PcounterClient?api=Version>

8.0.0 - Pcounter MacOS Integration

Using Pcounter's built in LPD Server, MacOS clients can print to the Pcounter server's Windows print queues.

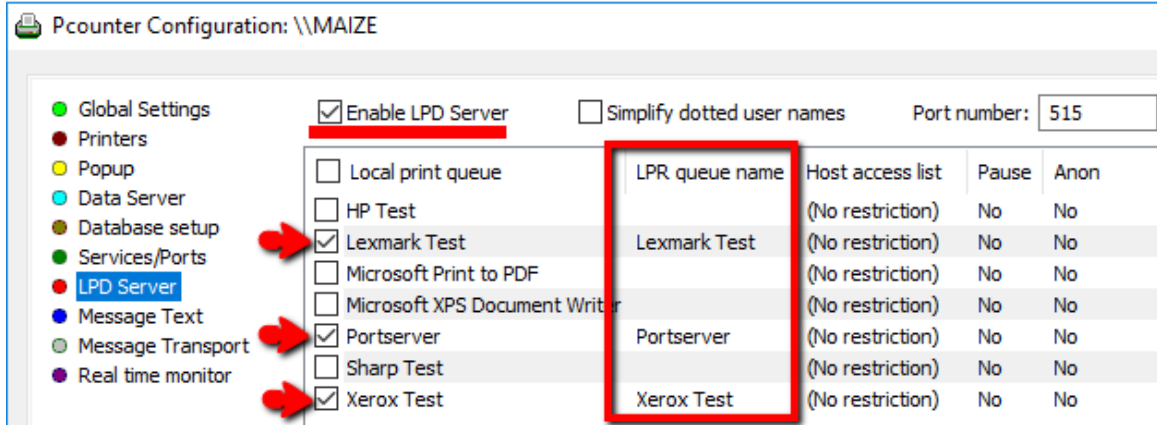
Using the PcounterClient.dmg, MacOS clients can print with Popup.

8.1.0 - MacOS LPR Printing to Pcounter Server

8.1.1 - Enable LPD Server

To allow LPR printing to the Pcounter server, first enable the Pcounter LPD Server.

- 1) Open Pcontrol and browse to the LPD Server bullet.
- 2) Check the box for 'Enable LPD Server'
- 3) Check boxes for each Windows Print Queue that should be available through LPR.
- 4) Set a 'LPR queue name' for each Windows Print Queue that should be available through LPR.
The 'LPR queue name' should not contain spaces, capitalization, symbols, or special characters.
- 5) Once completely configured, restart the Pcounter Printer Control service to accept the changes.

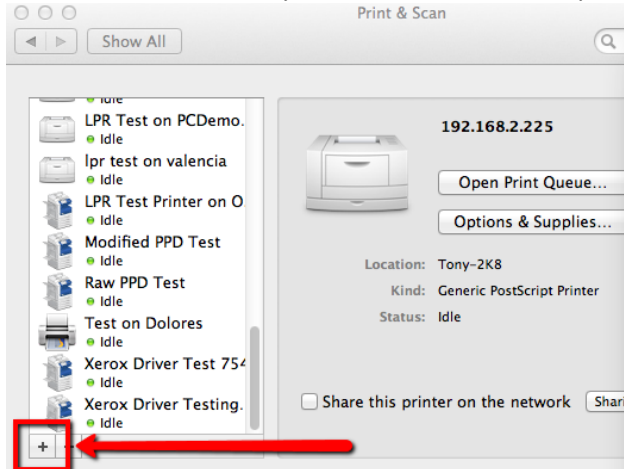


8.1.2 - Create Client Printer Object

Once the Pcounter LPD Server is enabled, an LPR printer object must be created on the MacOS workstation, pointing to the LPD Server.

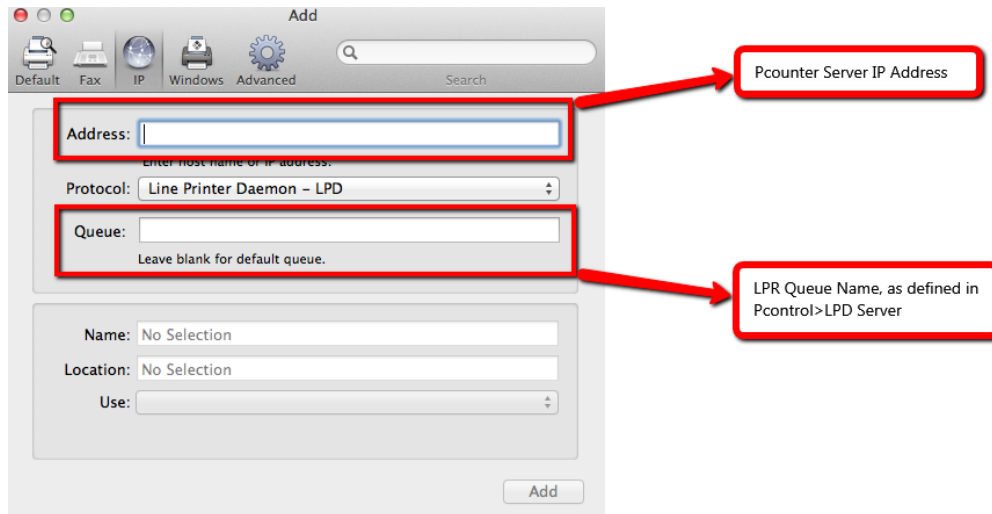
To create an LPR Printer on the MacOS workstation:

- 1) Open 'Print and Scan' and click on the + symbol to launch the add printer wizard.



- 2) In the 'Address' field, type the IP Address of the Pcounter Server.
- 3) In the 'Queue' field, type the LPR queue name that created in section 8.1.1 in Pcontrol.

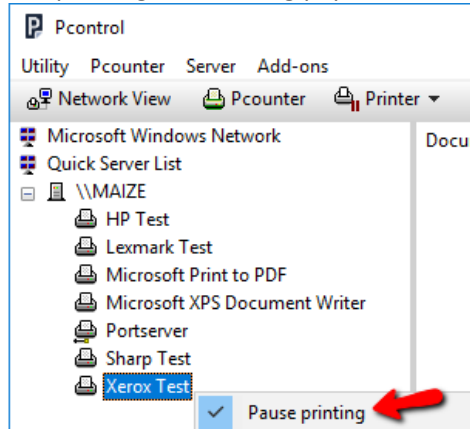
IE:



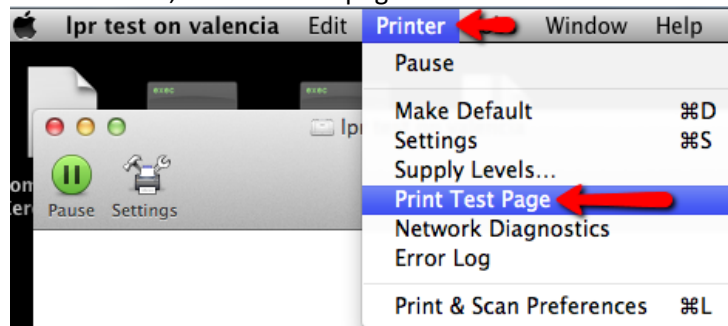
8.1.3 - Test Printing

To confirm the LPR printer successfully can submit jobs to the Pcounter LPD Server, perform the following procedure:

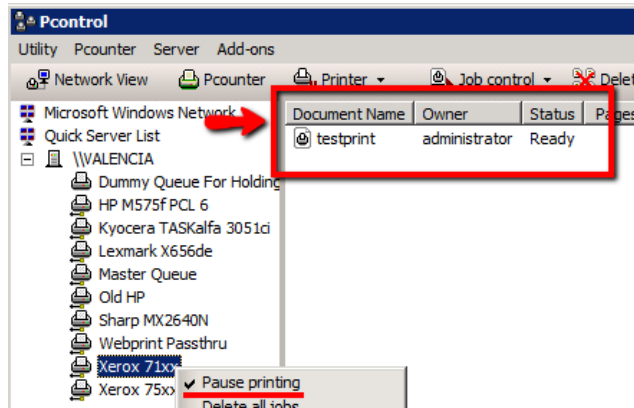
- 1) On the Pcounter Server, use Pcontrol to pause the print queue being tested.
- 2) To do so, simply right click and choose 'pause printing'. This will allow received jobs to be viewed and removed before printing, thus saving paper.



- 3) On the MacOS workstation, submit a test page.



- 4) If the job was received successfully, it will be visible in the queue, with a status of 'ready'.
IE:



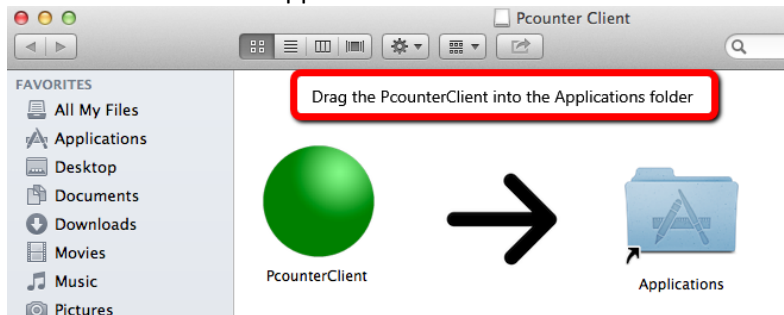
- 5) If the job was not received, the queue will be empty. Confirm port 515 (LPR) is open between the workstation and server.

8.2.0 - PcounterClient for MacOS

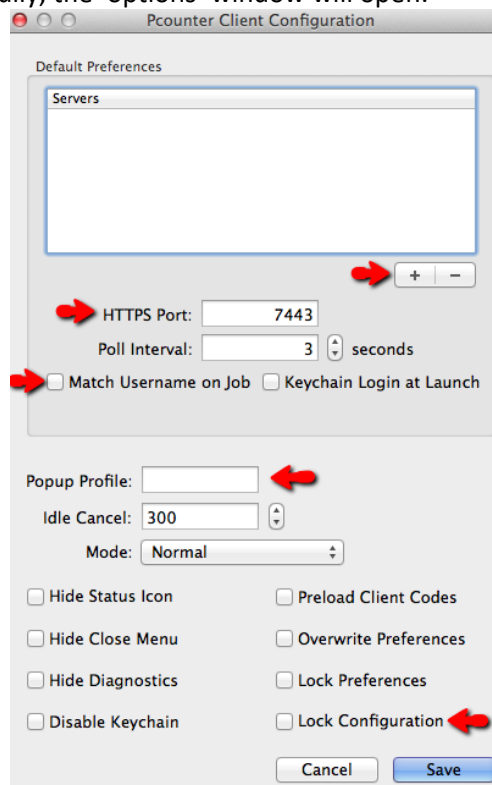
The PcounterClient.dmg allows for Popup on MacOS.

To configure the PcounterClient.dmg:

- 1) Download the latest version of the PcounterClient.dmg on the MacOS Workstation:
<http://apps.pcounter.com/supportfiles/OSXClient.zip>
- 2) Drag the PcounterClient into the Applications folder:



- 3) To configure the client options, hold the 'Control' key down on the keyboard and open the client. If done successfully, the 'options' window will open.



- 4) Popup Options:
- 4) Use the + to manually specify the Pcounter server IP.
- 5) 'HTTPS Port' is used to change the default port used by the Pcounter Printer Control Service.
- 6) 'Match Username on Job' forces Popup to match jobs based on username instead of IP.
- 7) 'Popup Profile' is used to specify a specific Popup Profile, as shown in section 4.3.
- 8) 'Lock Configuration' is used to permanently prevent access to this configuration screen, should be performed only once the client is fully configured to prevent reconfiguration.

9.0.0 - Pcounter Add-on Components

Pcounter has several add on components included with the product that extend its functionality.

9.1.0 - Pcounter WebPrint

For in depth documentation of Pcounter WebPrint, including installation and customization, please see our WebPrint Guide here: http://apps.pcounter.com/docs/pcounter_webprint_guide.pdf

9.2.0 - Balance.exe - Web App

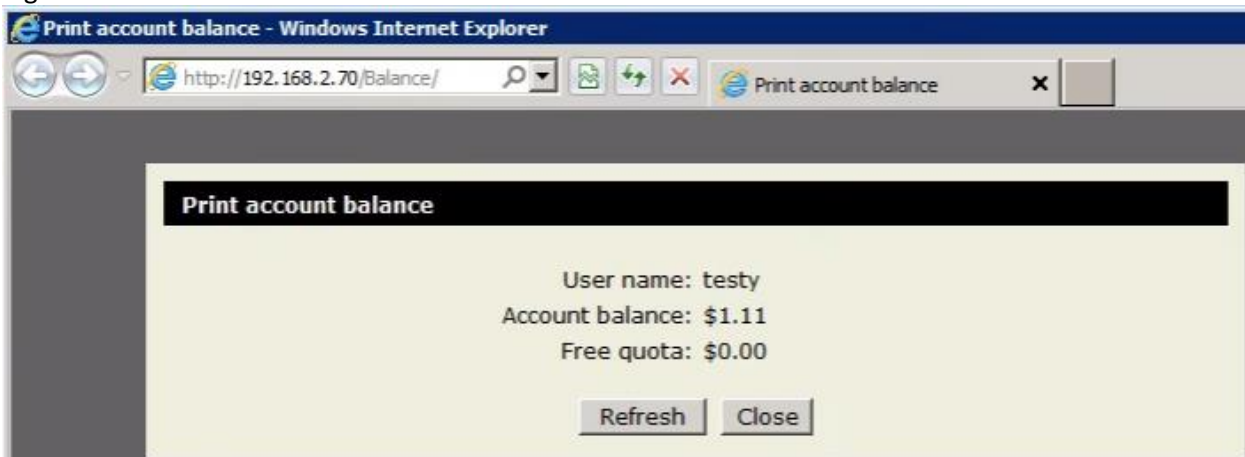
Balance.exe can be installed as a web application.

This creates a self-service webpage for users to check their own balances, any time.

Once fully configured, users are prompted for AD or Pcounter username/pw when accessing the page.

For installation, please consult our video guide here: https://youtu.be/J_IVgsgopnl

e.g.



9.3.0 - Account.exe

9.3.1 - Account.exe Command Line

Account.exe is a command line utility for modifying user balances and FQ, creating new Pcounter Users, defining an autocode, defining an ID#, defining a client code association, and more.

Account.exe is located by default at c:\program files (X86)\pcounter for nt\nt

To view all options:

- 1) Open a command prompt and cd to c:\program files (X86)\pcounter for nt\nt
- 2) Type Account and hit enter.

```
ACCOUNT.EXE 2.75
Copyright 2014 - A.N.D. Technologies - http://www.pcounter.com
Syntax:

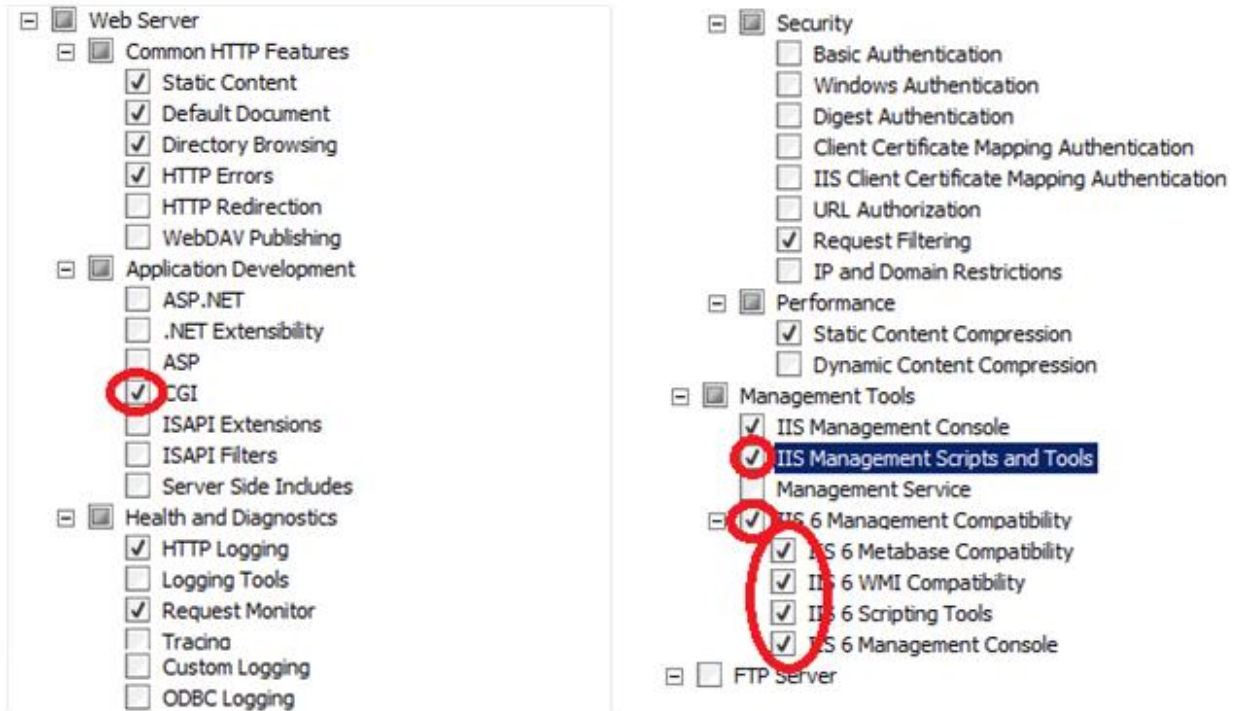
ACCOUNT DEPOSIT [UserName ! GroupName ! DomainName] [Amount] [Comment]
    Add to a user's account balance.
ACCOUNT BALANCE [UserName ! GroupName ! DomainName] [Amount] [Comment]
    Set a user's account balance.
ACCOUNT CHARGE [UserName ! GroupName ! DomainName] [Amount] [Comment]
    Subtract from a user's account balance.
ACCOUNT [FDEPOSIT ! FQUOTA ! FCHARGE] etc.
    Free Quota equivalents of above functions.
ACCOUNT [CDEPOSIT ! CQUOTA ! CCHARGE] etc.
    Color Quota equivalents of above functions.
ACCOUNT LIMIT [UserName ! GroupName ! DomainName] [Amount] [Comment]
    Set a user's low balance limit.
    Amount can also be Unlimited.
ACCOUNT AUTOCODE UserName Code
    Set a user's auto client code.
ACCOUNT VIEWBAL UserName
    View a user's account balance.
ACCOUNT CREATE UserName [Balance] [Password] [FullName]
    Creates a new PcounterUsers account.
ACCOUNT PROID UserName IDNumber [PINNumber]
    Set a user's copier ID information.
ACCOUNT BACKUP [ServerName ! DomainName]
    Backup account balances to a Batch file.
ACCOUNT ASSOC UserName CodeName
    Set a user/group client code association.
ACCOUNT SETDEFAULT [DomainName ! \\ComputerName] Balance [Limit] [FreeQuota]
    Set a default balance/limit/free quota for new users in a domain or OU.
ACCOUNT SETGROUPDEFAULT [DomainName\GroupName] Balance [Limit] [FreeQuota]
    Set a default balance/limit/free quota for new users in a security group.
ACCOUNT IISCFG
    Run the IIS configuration script.
```

9.3.1 - Account.exe Web App

Account.exe can also be installed as a web application. The account.exe web page allows administrators to change user account balances.

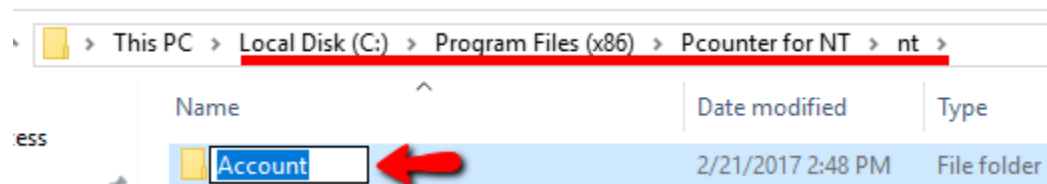
To install:

- 1) Ensure the following role features are installed for IIS:



- 2) Make a new folder called 'Account' in the Pcounter for NT\NT directory.

IE:

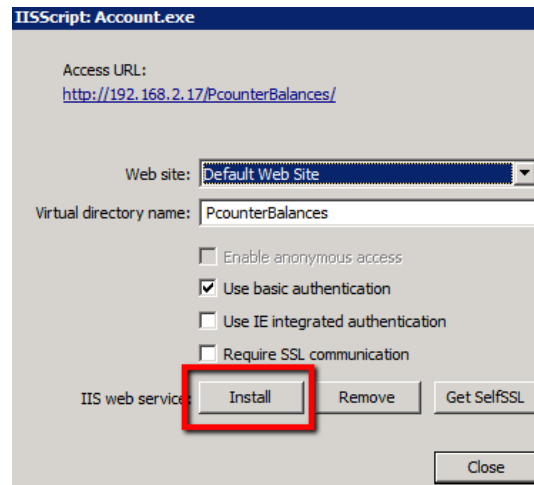


- 3) Place a copy of the account.exe in the NT\Account folder.

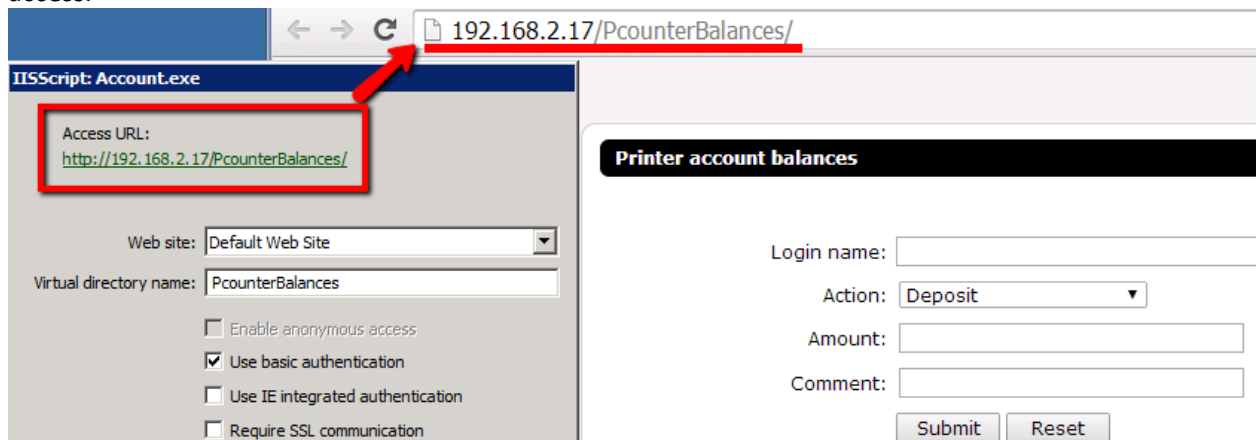
- 4) Open a command line prompt and cd to NT\Account.

```
C:\Users\administrator.PCOUNTERSF>cd C:\Program Files (x86)\Pcounter for NT\NT\Account
C:\Program Files (x86)\Pcounter for NT\NT\Account>_
```

- 5) Run the command 'account iiscfg' to launch the installer.
- 6) In the window that opens, define a custom URL if needed, then press the Install button to create the account.exe website.



- 7) Use the Access URL hyperlink to pull up the webpage. It should prompt for credentials to allow access.



9.4.0 - LDAP Integration

Pcounter can integrate with LDAP in real time.

9.4.1 - Enable LDAP lookup in Pcontrol

- 1) To enable LDAP lookup, go to Pcontrol>Global Settings, and check the box 'validate client passwords from external LDAP server'

Global Settings

Get user information from

Primary Domain Controller

Other server: _____

Local domain or directory (preferred) [Manage trusts](#)

Additional domain or server: _____

Login name for remote server: _____

Password for remote server: _____

Validate client passwords from external LDAP server

- 2) A window is displayed for configuring Pcounter's connection to a LDAP server.
- 9) LDAP Server IP, LDAP Port Number, LDAP Version. These values are used to connect to the LDAP server.
- 10) Username and Password are used by Pcounter to authenticate to the LDAP server. Leave blank for anonymous binding.
- 11) Base DN should match the root level of your domain. In example, our domain is named ANDTECHSF.com, so the root DN would be 'DC=andtechsf,DC=com'.
- 12) Login Name, Full Name, and memberOf attributes can all be defined manually. Leave at default values if unsure.
- 13) Test Username and Test Password can be used to test the LDAP lookup once all other fields are fully configured.

Pcounter automatically integrates with Active Directory LDAP without additional configuration. This configuration is only useful when using an external LDAP server.

LDAP Server: _____

Port number: 389 LDAP version: 3

Base DN (blank for root): _____

Map simple login name to: cn

Map full name to: displayName

Map memberOf to: memberOf

ID number attribute: employeeID

PIN number attribute: _____

Username (blank for anonymous bind): _____

Password: _____

Test username: _____

Test password: _____

Test

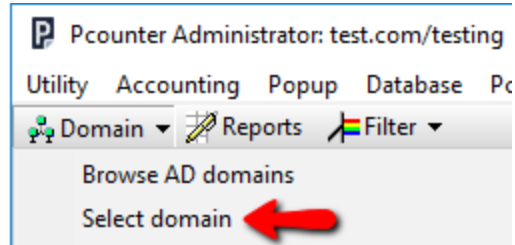
OK Disable

9.4.2 - View LDAP Database in Pcounter Administrator

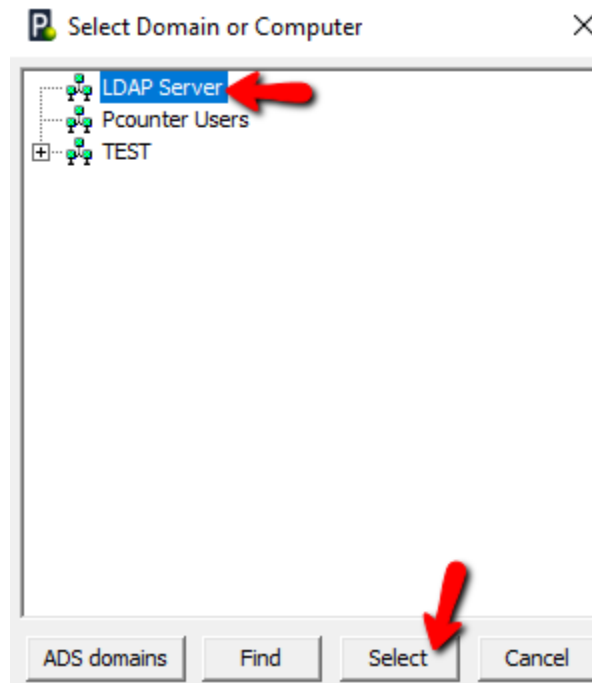
Pcounter Administrator can be manually configured to view an LDAP database of users, allowing for balance, free quota, autocode, etc. to be configured.

To view LDAP in PAdmin:

- 1) Open Pcounter Administrator, click on the 'Domain' drop down at the top left, and choose 'Select Domain'.



- 2) In the window that opens, choose 'LDAP Server' and click 'Select'.



- 3) A window is displayed for configuring Pcounter Administrators connection to a LDAP server.
- 14) The 'LDAP Server IP', 'LDAP Port Number', 'LDAP Version' values are used to connect to the LDAP server.
- 15) Username and Password are used by Pcounter to authenticate to the LDAP server. Leave blank for anonymous binding.
- 16) If required, a base DN. Leave blank if unsure.
- 17) Login Name, Full Name, and memberOf attributes can all be defined manually. Leave at default values if unsure.

The screenshot shows a dialog box titled "Pcounter LDAP connect". It contains the following fields and controls:

- LDAP Server: [Text input field]
- Port number: [Text input field containing 389]
- LDAP version: [Dropdown menu showing 3]
- Base DN (blank for root): [Text input field]
- Map simple login name to: [Dropdown menu showing cn]
- Map full name to: [Dropdown menu showing displayName]
- Username (blank for anonymous bind): [Text input field]
- Password: [Text input field]
- Buttons: Save, Cancel

- 4) Once all values are populated as needed, click 'Save' to close the window.
If successful, the LDAP database of users will be displayed.
If unsuccessful, an error will be displayed, then the Pcounter Users database. Try again by going back to domain>select domain>LDAP Server.

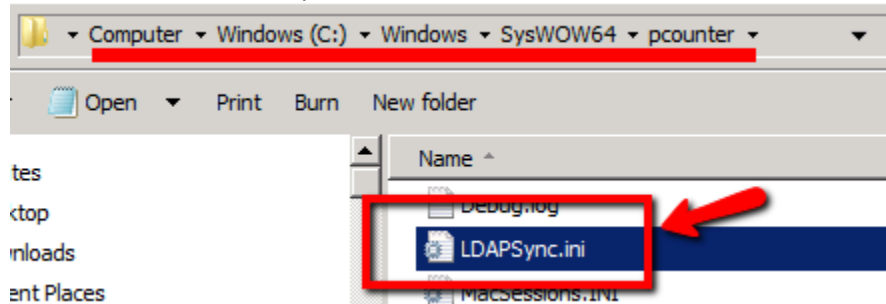
9.4.3 - LDAP Sync Tool

The Pcounter LDAP Sync tool is used to export users, user balances, autocodes, ID#s, and/or PIN#s from LDAP directly into the Pcounter Databases.

NOTE. Before the LDAP Sync tool can be used, LDAP lookup should be fully configured and tested in Pcontrol as shown in 'Section 9.4.1 - Enable LDAP lookup in Pcontrol'.

To configure and run LDAP Sync:

- 1) Browse to C:\Windows\SysWow64\Pcounter\
2) Create a new file named LDAPSync.ini



- 3) Open the file with notepad to make changes.
- 4) The file format is:
[LDAPSync]
Domain=
AutocodeAttribute=
SyncIDPIN=
DefaultBalance=
DefaultLimit=
DefaultFQ=

5) Each option corresponds to:

18) Domain=domain_name

(Mandatory) The domain can either be Pcounter Users or the short domain name. Do not use the fully qualified AD/DNS domain name. If domain_name is Pcounter Users, then Pcounter Users accounts will be created with the same LDAP name. Passwords are not readable and cannot be imported.

19) AutocodeAttribute=attribute_name

(Optional) Define an attribute that will be imported as an auto code in Pcounter.

20) SyncIDPIN=value

(Optional) This option will import the ID number (and PIN number if defined) attributes into the Pcounter database.

If value is 1 then they will import into ID/PIN Number 1, likewise if value is 2 they will import into ID/PIN Number 2.

NOTE. The ID# and PIN# attributes are defined in Pcontrol's Global Setting's LDAP Config.

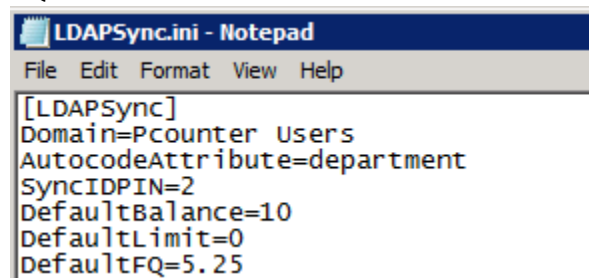
21) DefaultBalance=value

22) DefaultLimit=value

23) DefaultFQ=value

(Optional) These only apply if domain_name is Pcounter Users and are used to set default balance options when creating new accounts. Use DefaultLimit=Unlimited if unlimited credit is required.

6) Below is an example file that will create new Pcounter Users from LDAP, with the user's department attribute from LDAP being populated as a Pcounter Auto Code, ID#s and PIN#s from LDAP will be populated in ID#2 and PIN#2, the user's balance will 10, low balance limit will be 0, and Free Quota will be 5.25.



```
LDAPSync.ini - Notepad
File Edit Format View Help
[LDAPSync]
Domain=Pcounter Users
AutocodeAttribute=department
SyncIDPIN=2
DefaultBalance=10
DefaultLimit=0
DefaultFQ=5.25
```

7) Once the ini is populated with the desired values, run the LDAP Sync command by opening a command prompt and executing the command:

C:\Windows\SysWow64\pcntdata.exe ldapsync

10.0.0 - Pcounter v4 Pull Queue Overview

In 2021 a serious vulnerability was discovered in the Microsoft Print Spooler service that would allow attackers full domain administrator access to a Windows domain. As a response to this Microsoft has disabled normal type 3 printer sharing and there is no ETA for it to be restored.

As a workaround Pcounter engineering has created a new pull printing workflow where a special type 4 print queue is created and configured on the Pcounter server, and then pushed to users via print management.

This special v4 queue receives jobs and then hands them to a type 3 printer where print release and usage logging can occur normally.

Print Release Before Vulnerability

User workstation sends print job ->

Job received by type 3 pull queue, pauses, and is held for release ->

User releases print job via Pcounter Embedded or Pcounter Station.

Print Release After Vulnerability

User workstation sends print job ->

Job received by type 4 pull queue. Job is paused and moved to type 3 pull queue ->

Job received by type 3 pull queue and is held for release ->

User releases print job via Pcounter Embedded or Pcounter Station.

10.1.0 - Update Pcounter

Pcounter for Windows must be at version 2.92c or newer to allow the v4 Pull Queue workflow.

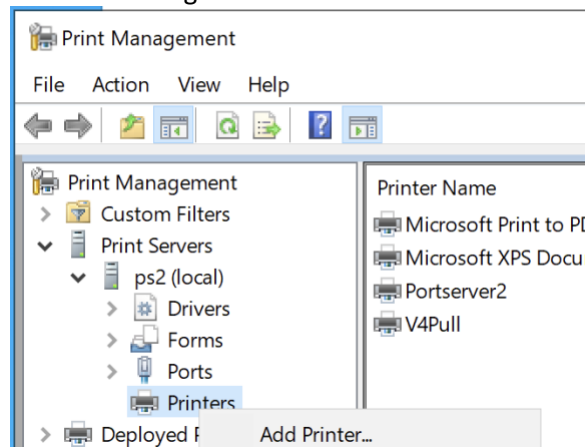
Download and update Pcounter to 2.92c or newer if not already at that version.

292c manual patch: http://apps.pcounter.com/supportfiles/Pcounter292c_update.zip

Pupdate Video: https://youtu.be/xpP_1SbiBu4

10.2.0 - Create v4 Queue

- 1) On the Pcounter server, download and install the needed v4 print driver. Google search the driver needed if necessary.
- 2) Create a new printer in Print Management.



- 3) Choose 'Add an IPP, TCP/IP, or Web Serv. Printer by IP address'.
 - a. Set the 'type of device' dropdown to TCP/IP Device.
 - b. In the host name or IP field type "127.0.0.1" without quotes.
 - c. Uncheck the box 'auto detect the printer driver..'
 - d. Click Next to continue.

Network Printer Installation Wizard

Printer Address
You can type the printer's network name or IP address.

Type of Device: TCP/IP Device

Host name or IP address: 127.0.0.1

Port name: v4pull

Auto detect the printer driver to use.

- 4) After a delay the port settings window will be displayed.
 - a. For 'Device Type' set the bullet to 'Custom' then click the Settings button.
 - b. Set 'Protocol' to 'LPR'.
 - c. For LPR 'Queue Name' type "PcountMoveJob" without quotes.
 - d. Click OK to close the Port Settings and then click Next to move forward.

Configure Standard TCP/IP Port Monitor

The device is not...
1. The device is t...
2. The network is...
3. The device is p...
4. The address o...

If you think the a...
address and perf...
device type below

Device Type

Standard

Custom

Port Settings

Port Name: v4pull

Printer Name or IP Address: 127.0.0.1

Protocol

Raw

LPR

Raw Settings

Port Number: 9100

LPR Settings

Queue Name: PcountMoveJob

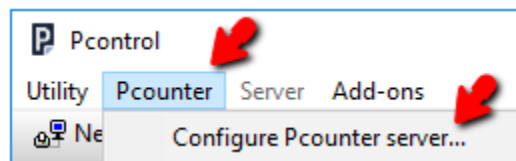
- 5) Choose the needed type 4/v4 'Class Driver'. If this is the first time it is being used, you may have to choose 'Install New Driver' and then 'Have Disk' and browse to the driver's location. Google search for help if needed. Once a 'v4 Class Driver' is selected click Next.
- 6) Enter an identifying Printer Name, check the box to 'Share this printer', and enter an identical Share Name.

- 7) Click Next, Next, and Finish to complete the creation of the v4 pull queue.

10.3.0 - Enable & Configure v4 Queue

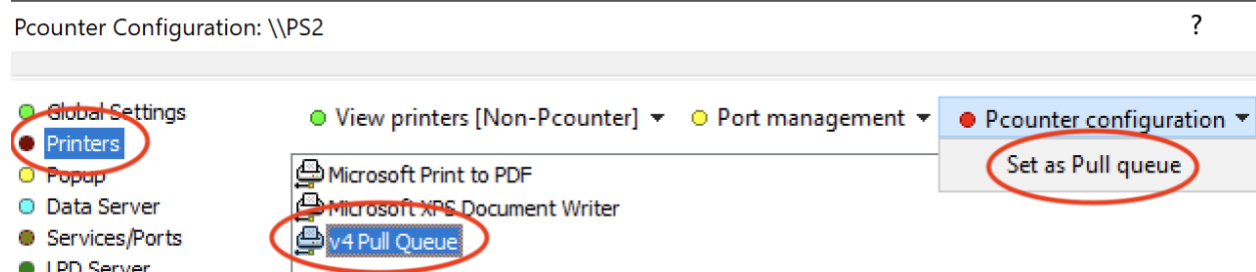
10.3.1 - Enable v4 Queue

- 1) From the main Pcontrol Window, click at the top where it says Pcounter, and then 'Configure Pcounter Server'.



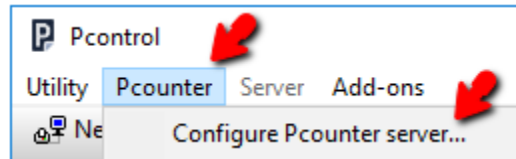
- 2) The name of the Pcounter server will be prepopulated. Just click OK to open the next window.

- 3) Once the Pcounter configuration window is displayed, click on the 'Printers' bullet.
- 4) Set the view to 'View Non-Pcounter Printers', then left click the v4 pull queue that was just created to select it and click 'Pcounter configuration' > 'Set as Pull queue'. The queue will disappear from this view if successful.

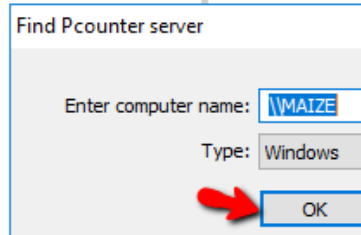


10.3.2 - Configure v4 Queue

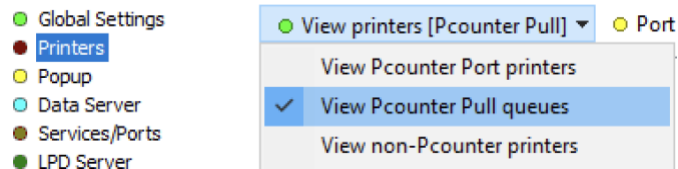
- 1) From the main Pcontrol Window, click at the top where it says Pcounter, and then 'Configure Pcounter Server'.



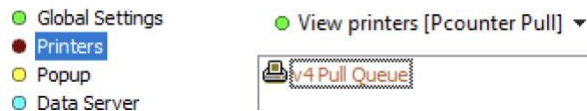
- 2) The name of the Pcounter server will be prepopulated. Just click OK to open the next window.



- 3) Once the Pcounter configuration window is displayed, click on the 'Printers' bullet.
- 4) Set the view to 'View Non-Pcounter Printers' Set the view to 'View Pcounter Pull queues' to again view the queue.



- 5) Double click the queue to view its configuration window.



- 6) Set the Accounting dropdown to 'None', then if:
 - a. Popup is needed in combination with print release; check the two boxes 'Enable popup, print release, etc.' and 'Count jobs in advance for display'.
 - b. Popup is not needed; only check the box 'Count jobs in advance for display'.

- 8) Once the previous step is complete, then if:
 - a. Popup is needed; click the underlined text at the bottom until it says, 'Move job after popup to' then click the arrow button to the right of that and choose the type 3 Pull Queue that was already configured for use with print release prior to the vulnerability.

- b. Popup is not needed; click the underlined text at the bottom until it says, 'Move job after count to' then click the arrow button to the right of that and choose the type 3 Pull Queue that was already configured for use with print release prior to the vulnerability.

- 9) Distribute the type 4 pull queue to user workstations as needed. If help is needed with that operation please see the Pcounter Distribution guide, section 1.0 starting on page 4: http://apps.pcounter.com/docs/pcounter_distribution_guide.pdf

11.0.0 - Documentation and Video Links

This concludes the guide. If there are any questions, please email support@pcounter.com.

Links to recommended Pcounter documents and videos:

Pcounter Support Wiki:

<https://pcounter.wixanswers.com/en/>

All Pcounter Videos:

<https://www.youtube.com/user/andtechsf>

Pcounter for Windows 2.x - Primary Documentation:

<http://apps.pcounter.com/docs/pcounterwin.pdf>

Pcounter for Windows 2.x - Primary Documentation:

<http://apps.pcounter.com/docs/pcounterwin3x.pdf>

Pcounter for Windows - Install, Change, & Upgrade Guide:

<http://apps.pcounter.com/docs/pcounterwin3x.pdf>

Pcounter for Windows - Old Video - Prepare, Install, Configure:

<https://www.youtube.com/watch?v=hyOaYOnVp3k>

Pcounter Client and Printer Distribution Guide:

http://apps.pcounter.com/docs/Pcounter_Distribution_Guide.pdf

Pcounter WebPrint Installation and Customization Guide:

http://apps.pcounter.com/docs/Pcounter_webprint_Guide.pdf

Pcounter Administrator Training Video Part 1:

<https://www.youtube.com/watch?v=FxwmXCE6ebU>

Pcounter Administrator Training Video Part 2:

<https://www.youtube.com/watch?v=5jLsOj4tKJw>

Pcounter Popup Training Video:

<https://www.youtube.com/watch?v=chSbuDZJlhQ>

Pcounter Station - Installation and Troubleshooting Guide:

http://apps.pcounter.com/docs/pstation_guide.pdf

Pcounter for Windows - Balance.exe as a Web App:

https://www.youtube.com/watch?v=J_IVgsgopnI