

NETOP™

# PrintLimit™ PRO

Print Management Software

## Implementation Guide

Version 11



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# Implementing PrintLimit Pro

PrintLimit Pro is a server-side application which will become an integral part of your IT infrastructure. Implementing PrintLimit Pro will impact many areas of IT management in addition to the typical technical realm. Of equal importance, are the non-technical areas including usage policies and end-user relations. The deployment should be planned to ensure a smooth rollout and minimize the impact on network users.

This document is designed to assist network administrators and IT managers in larger organizations with the rollout process and addresses both the associated technical and administration tasks in an endeavor to minimize disruption to end-users and ensure a smooth transition.

The tasks associated with a deployment in smaller organizations are intuitive and the install process may be no more than running the installer and then speaking to users. Skimming this guide however may prove useful for smaller sites as well.

This document details a series of tasks associated with a typical PrintLimit Pro rollout. It is designed as a starting point for your own rollout plan and will need tailoring to fit individual requirements.

## Note

- For information on how to install PrintLimit Pro, refer to the PrintLimit Pro User Guide, which is available from [www.netop.com](http://www.netop.com).

## Task 1: Determine the project scope

Before diving in and installing PrintLimit Pro, IT staff should take a few moments to consider the following questions:

- What are my reasons for implementing PrintLimit Pro?
- How will I use PrintLimit Pro to achieve these objectives?
- What effect will PrintLimit Pro have on my users and any existing IT usage policies?
- Does PrintLimit Pro fit within my budget?
- Who else should be involved in these considerations and the implementation process?

PrintLimit Pro can be implemented in a number of different control modes ranging from the minimalistic silent logging, to a full user-pays environment. The choice of control mode will influence internal policy and procedures and this should be considered prior to full deployment. It may only take a few mouse clicks to install PrintLimit Pro and have it up and running at the technical level but policy changes at the management level may take longer to implement. Discuss this with the right people early. Having buy-in from all interested parties prior to deployment will ensure a successful project.

## Task 2: Understand the system

Before attempting a deployment on a live network, system administrators and IT managers may like to take some time to evaluate and understand the capabilities of PrintLimit Pro in a test environment. There is no better way of understanding how a software application works than actually installing and using the system. Many large organizations may have a server or system dedicated to testing. Smaller networks might like to install the PrintLimit Pro trial version on a

non-critical desktop system running Windows XP or higher. It only takes a few minutes to download and install PrintLimit Pro.

PrintLimit Pro runs unrestricted for 40 days to allow you plenty of time to evaluate the many features and functions the software has to offer. If you purchase a license key later, it can be added to the installed copy so you don't have to install and configure again. You can download PrintLimit Pro from <http://www.netop.com/support/downloads/netop-printlimit-pro.htm>. The user guide in PDF format is also available from this page.

## **Task 3: Select the control mode**

The control mode defines how PrintLimit Pro interacts with the users and controls their print usage. The control modes available listed in order of user impact are:

1. Silent monitoring (no control, only monitoring).
2. Active monitoring (enforcement of print policies).
3. Simple quota system.
4. Quota system with user-pays "top ups".
5. Up-front payment.

### **Silent monitoring**

In the silent monitoring model all users have unrestricted privilege so access is never denied. PrintLimit Pro will continue to silently collect statistics on activity and its associated cost. All data is reportable and available via PrintLimit Pro's administration interface. Silent monitoring mode is popular in a business environment where management needs information on user activity.

### **Active Monitoring**

A variation of silent monitoring is active monitoring. In this mode, in addition to simple logging, administrators may implement active features such as:

- Prompt and ask the user to confirm if they don't print a job in duplex.
- Display a popup and discourage printing of emails.
- Mention print policies in popup's such as web pages should not be printed in color.
- Push out environmental impact information to inform the user of their usage.

### **Quota system**

The majority of organizations that adopt PrintLimit Pro choose to implement a quota system. Under this model users are allocated a budget on either a daily, weekly or monthly basis. It is the user's responsibility to manage their own usage to stay within their allocated allowance. Once the allowance is exceeded access to the resource is denied. Some organizations will allow users to request additional quota via management approval, or, in an education environment, it is common to sell users additional quota via print cards.

#### **Example**

Smithtown High School provides students with \$5.00 a week to cover internet use (billed by time) and printer use. If users need additional quota, they can purchase a print card from the school cafeteria or library.

## Up-front payment

Full up-front payment environments (user-pays) are used in some schools and universities. Users start off with a balance of zero and need to add money to their account before access to services is granted. Often print cards/pre-paid cards are used as a convenient way to manage the payment process.

## Changing your selected control mode

The selection of control model will undoubtedly have IT usage policy repercussions. Changing from one control mode to another is an easy process and simply involves changing the way PrintLimit Pro is configured. Once an organization selects a control mode they are not forced to continue with the same control mode, and can vary their approach at any time. PrintLimit Pro does not impose any restrictions on this policy decision, however change of control policy may prove to be controversial, for example, moving from a previously free service to a full user-pays model. A common compromise is to phase in the change by first moving to a quota system with a free quota allocation, then move to a full user-pays model at a later date. Take the time now to consider the policy and political repercussions of the move.

## Task 4: Pre-installation preparation

PrintLimit Pro requires a correctly configured network environment. Most organizations with a Windows Domain network setup should be able to install and use PrintLimit Pro without any network reconfiguration. Smaller organizations running simple peer-to-peer networks may need to plan some changes.

### Checklist

#### √ **Users have logon accounts and passwords**

PrintLimit Pro tracks user identity via their logon name. It is important that each user has their own account and password and is aware that their password should remain secret. By default, PrintLimit Pro does not maintain its own users and passwords, and instead uses the in-built Operating System logon accounts. This means that users and system administrators have to manage logon accounts and passwords for all services including internet access, file permissions, security, PrintLimit Pro and general network/computer access. PrintLimit Pro does support internal users where the password can be maintained inside PrintLimit Pro, but the best-practice option is to always consider domain/system accounts where possible.

#### √ **Printers are hosted on a server**

PrintLimit Pro works by intercepting print jobs passing to the printer via a print queue. Typically the hosting of a print queue is called acting as a print server. PrintLimit Pro supports Windows, Linux, Novell (OES iPrint) and Mac OS X based print servers. In a typical network environment all printers are captured on a server and then shared to users as network resources. The print server can be an existing file server or a server running other software; however in a large network a dedicated print server is usually recommended. The print server model provides a single point of control for printer permissions and queue management, as well as other benefits such as automatic driver deployment and updates.

Although PrintLimit Pro can centrally track print queues hosted on multiple computers (for example locally attached desktop printers), it is best practice to centralize printers onto the minimum number of systems/servers. Typically this involves:

- Ensuring network printers (printers with a network interface) are centrally captured on the server(s) and shared using standard Windows printer sharing.
- Network clients (workstations) map to the printers shared on the network.
- Consider networking existing directly attached printers and hosting server queues.

Additional information on the required setup is covered in the PrintLimit Pro User Guide.

#### √ **Printers use supported drivers**

PrintLimit Pro will work with the majority of printer hardware without any additional configuration. Most printers use Postscript or PCL drivers (Postscript and PCL refer to the printer language used by the driver). Many high-end printers support multiple languages including possibly a proprietary language. Technical staff should check which drivers are available. If a selection of drivers is available, select according to this order of preference:

1. Postscript (any level)
2. PCL 5
3. PCL6 or other

PrintLimit Pro supports many proprietary GDI based drivers, but where possible we always recommend standard compliant drivers.

#### √ **Schedule downtime and ensure required information is at hand**

On fully patched servers, a restart should not be required during installation. It is however recommended that a 30-minute block of downtime be scheduled to take the pressure off during initial testing. Ensure end-users are aware of the potential disruption of print services.

Technical staff should also ensure they have technical information at hand including:

- Name of the domain server or an Active Directory node (or LDAP settings if using LDAP servers).
- User name and passwords for both a network and local Administrator level accounts.

## **Task 5: Installing PrintLimit Pro in a “test mode”**

It is recommended practice to first roll out PrintLimit Pro in silent monitoring mode, even if your organization’s immediate goal is to use PrintLimit Pro to implement quotas or charging. Silent monitoring mode will allow testing and verification of the setup behind the scenes without the worry that PrintLimit Pro might start denying access to resources.

### **How to setup silent monitoring mode**

The idea is to set all users to have unrestricted privileges so that in the event that their account drops to zero, access will not be denied. We recommend the following installation procedure:

- Install PrintLimit Pro on your server(s).
- Run PrintLimit Pro for the first time. The setup wizard will open.
- Follow the directions, selecting your domain server and other settings.
- During the wizard, clear the **Deny access when users run out of credit/quota** check box.

- Continue configuration by setting costs, discounts, filters and restrictions to define the control parameters that PrintLimit Pro will use.

More information on the installation of PrintLimit Pro is covered in the “Quick Start” section of the PrintLimit Pro User Guide.

## Task 6: Test PrintLimit Pro

Testing is an important step with any software deployment project. Use the following test plan to verify the setup, charging rules work as expected, and that users are charged appropriately.

### Printer-related tests

**OBJECTIVE:** To verify printers are correctly configured and supported by PrintLimit Pro and charging works as expected.

**METHOD:** Log on to a network workstation under a standard user account and print a test documents for each test case. Repeat the test cycle for all printers (or printer types if many printers).

Test	Test Criteria	Passed
Print a single page document.	The Print Log lists the job as a single page and the calculated cost is correct.  No error messages are listed in the PrintLimit Pro Application Event Log.	
Print a multi-page document	The Print Log lists the job with the correct page count and the calculated cost is correct.  No error messages are listed in the PrintLimit Pro Application Event Log.	
Print a color document with images	The Print Log lists the job with the correct page count and the calculated cost is correct.  No error messages are listed in the PrintLimit Pro Application Event Log.	
If Advanced Charging options are used, test other attributes such as Grayscale and/or Duplex discount.	The Print Log lists the job with the correct calculated cost.  No error messages are listed in the PrintLimit Pro Application Event Log.	
User Accounting	Verify that all printed test documents are listed under the correct user account and that the page count and account balance associated with the user’s account have changed accordingly.	
Printer Accounting	Verify that all printed test documents have increased the printer’s page count counter.	

## Operational tests

**OBJECTIVE:** To verify user management and related tasks work as expected.

**METHOD:** Perform common user management tasks and verify the operations work and log as expected. Perform each of the following tests in the standard PrintLimit Pro Administration Console, and then repeat the relevant tests in the Web Tools interface

Test	Test Criteria	Passed
Set user's credit	Select a test user in the PrintLimit Pro Admin Console and add a non-zero amount to their account. Verify the amount is applied and a transaction was recorded against the user's account. View transactions by double clicking on the user and selecting the Transaction History tab.	
Changing a user's restriction	Select a test user, set their credit to zero and change their status from "unrestricted" to "restricted". Verify that printing and/or internet use is denied and that the user receives the popup denied message.	
Auto scheduling	Set up rules under the Groups section to allocate credit on a daily basis. For example, place a \$1.00 daily allocation on the "[all users]" group. Check in 24 hours and verify the credit was allocated properly to the users accounts and the event was recorded in the users Transaction History and the App. Log.	
User creation	Define Initial Credit rules under the Groups section to define how new users accounts are created. Add a test user to the domain. Print a document from the test user account. Verify that the account was created as per the defined rules. Delete the test account.	
Remote access	Repeat the first two tests from a remote system logging in using a standard web browser accessing the URL: <a href="http://[server]:9191/admin">http://[server]:9191 /admin</a>	
User transfer	Perform this test if your organization plans on allowing end-users to transfer funds to other users. Log on as a test user and open the browser to the URL: <a href="http://[server]:9191/user">http://[server]:9191/user</a> . Select the transfer option and transfer funds to another account. Verify the transfer is logged as a transaction in both users Transaction History.	

Test	Test Criteria	Passed
Print cards	Perform this test if your organization plans on using print cards/pre-paid cards. Follow the instructions in the PrintLimit Pro User Guide to create a test batch of 10 cards. Import the print card numbers (the *.tnd file) into the system. Log on as a test user, enter the card number and verify the equivalent monies were applied.	

## Other testing

We suggest run PrintLimit Pro in silent mode for testing purposes for a period of one week. Regularly inspect the PrintLimit Pro Application Event Log for error messages or reported problems. This testing phase can be undertaken in parallel with many of the following tasks. Technical staff should take the opportunity to familiarize themselves with the application.

## Task 7: Technical support

If you experience any problems, need help with installation or configuration, or have any general questions about PrintLimit Pro, you can find assistance on the web or contact our support team.

Link to information, technical support form and online chat with the technical support team:  
[http://www.netop.com/printlimit\\_pro\\_support](http://www.netop.com/printlimit_pro_support).

## Task 8: Preparation for rollout

PrintLimit Pro is now installed and tested and much of the technical work is complete. IT management should now address policy related issues, user training and end-user experience.

### Policy changes

Most organizations have a formal "acceptable use policy" or a general "IT usage policy" covering the use of IT equipment. Smaller organization may have a usage policy that is informally conveyed by management. PrintLimit Pro will have an effect on end-users and their use of the IT equipment. In a quota environment, it is important to formalize the policy of when the quota is allocated and how users are expected to use it. Consider modifying existing policies or documentation. In many cases a simple email or notice on the Intranet site will be enough.

### Staff training

Most organizations delegate the day-to-day user management tasks to selected staff. Day-to-day user management includes:

- Keeping a general eye on activity and use.
- Manually taking money and adding credit to user accounts.
- Handling refunds or requests for additional quota.

PrintLimit Pro provides a special web browser based management interface designed for non-technical users. Even though the Web Tools interface is simple and intuitive, technical staff should

dedicate some time to run through standard operations with the selected non-technical staff and explain how these relate to policy and operation.

After training a staff member, grant them access to the administration interface. This step will require adding the user's name to the list of approved administrators. The process is covered in detail in the PrintLimit Pro user guide section Assigning Administrator level Access.

## **End-user training**

End-user training revolves more around explaining policy changes and general awareness of the system. From an operations perspective PrintLimit Pro will have minimal impact on end-users. In most cases users will just continue to use the network as they always have. Consider the following briefing points when addressing end-user training:

### **For silent monitoring**

- Consider informing users that monitoring is taking place. Typically organizations that announce such a policy change see a 10% to 20% reduction in printing and/or internet use as users become aware that irresponsible use is being monitored.
- Modify IT use policy to ensure users are aware that all activity is monitored.

### **For a quota system**

- Explain why the quota system is being implemented.
- Detail when the system will come into effect.
- List how much credit will be provided to users.
- Explain what the allowance covers and how it can be used.
- Provide instructions on what happens when users run out of credit. For example, explain how to purchase a print card.
- Instruct users on how they can monitor their account status and usage via the web tools interface.
- Provide a general explanation of any changes to the IT usage policies.

### **For up-front payment systems**

- Explain why charging is being implemented.
- Detail when the system will come into effect.
- List how the user is to add credit to their account.
- Instruct users on how they can monitor their account status and usage via the web tools interface.
- Provide a general explanation of any changes to the IT use policy.

In small organizations it may be possible to convey this information in a single day. With larger organizations, or organizations where the policy change is perceived as substantial, consider giving users plenty of time prior to go-live. The appendix in the PrintLimit Pro User Guide includes a number of Example End User Information Sheets that may be used as a starting point for your own information sheets or Intranet pages.

## **End-user web access configuration**

The end-user web interface can be quickly tailored to fit local requirements. PrintLimit Pro provides configuration options to conveniently hide or disable selected features. Take the time

now to enable and disable features applicable to the local situation and requirements. For example if your organization does not intend to use print cards/pre-paid cards, the card link can be removed from the web tools interface. Additional details including an explanation of the options are detailed in the PrintLimit Pro user guide section Customizing the User web pages.

Technical staff with HTML experience may also choose to tailor the "look-and-feel" of the web tools interface. Ideas include:

- Coordinating the page design with an existing Intranet site.
- Adding text on key pages to explaining the organization's IT policies and procedures.
- Additional instruction text to assist users with managing their account.

**Tip**

- Much of the functionality in the web interface has come from suggestions from organizations running PrintLimit Pro. If you have an idea, let the PrintLimit Pro development team know so they can evaluate it for inclusion in an upcoming release.

## Task 9: Deploying the client software

This task is undertaken by technical network staff and is usually run in parallel with testing and the previous task. The PrintLimit Pro User Client is small client application that displays the user's account status upon login. It is useful in a quota or charging environment as it informs users of their account status each time they sit down and log into a system. The client software is also used to display the account selection popup if you are providing users with access to shared accounts. Most organizations, except those undertaking silent monitoring will deploy the client software.

Client deployment options
<b>Zero-install Deployment:</b> Run the client (pc-client-local-cache.exe) directly off the server share.
<b>Local Install:</b> Installing the client software using the provided installer. A good option for non-domain laptops.

Additional information on deploying the client software, including automated deployment methods are detailed in the PrintLimit Pro User Guide.

## Task 10: Go live

Installation and testing is complete. Administration staff is trained in user account management, and all users have been informed of the policy changes. You are now ready to go live! In a charging or quota environment this simply involves changing the users (or the selected sub-set of users) to restricted mode and applying their initial starting credit.

To change the users' operating mode, consider using the Group / [All Users] button in the PrintLimit Pro Admin Console. This provides a simple way to set the users' credit and privilege mode at the domain group level in one simple step.

### Example:

Smithtown High School has completed testing, staff training, and all students are aware of the policy change. On the first day of this month the quota system will come into effect. Sally, the network administrator, uses the Group Member Operations page to apply the following policy:

Group	Starting Amount	Privilege	Group Rules
Junior students	\$10.00	Restricted	Allocate an additional \$10.00 per month
Senior students	\$15.00	Restricted	Allocate an additional \$15.00 per month
Teaching staff	\$0.00	Unrestricted	Amount counts down from zero and is billed to faculty budgets in agreed proportions at the end of every semester.

## Task 11: Completion

PrintLimit Pro is now controlling and monitoring. Like other important applications and network infrastructure, technical staff should allocate time to check system health, perform maintenance, and undertake regular backups. PrintLimit Pro is designed as a self-managing system however regular backup and inspection is recommended.

### Suggested daily tasks

Undertake a full backup of all files located under<sup>1</sup>:

Windows: C:\Program Files\Netop\Print-Limit Pro\

Mac: /Applications/Netop/Print-Limit Pro/

Linux/Novell: ~ netop/print-limit pro/

Use automated backup software. This will ensure all PrintLimit Pro data files can be restored in the event of system failure or other unforeseen problems. Important: PrintLimit Pro includes its own point-in-time backup option; however this is designed to complement rather than replace a good off-disk package strategy.

### Suggested weekly tasks

- Inspect the PrintLimit Pro Application Event Log (App. Log) for any important messages or error events. The system can also be configured to automatically email you on error level events.
- Inspect activity logs to ensure PrintLimit Pro is continuing to record all activity.

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**Note** The path may be different if your PrintLimit Pro installation was upgraded from an earlier version. If you have installed using the default folder name, the path will be:  
Windows: C:\Program Files\GenevaLogic\  
Mac: /Applications/ GenevaLogic /  
Linux/Novell: ~ genevalogic /

## Suggested monthly tasks

- Check the PrintLimit Pro website for updates.
- Review your backup procedure – make sure you stick to it!
- Review resource costs against any changes in the cost of toner, paper, and internet fees if the Internet Control module is used. Ensure that end-users are informed if prices are to change.

## Task 12: Extending PrintLimit Pro

Now that PrintLimit Pro is in place, monitoring, controlling and reporting on your printing environment, why not take the time to fine tuning day-to-day operations and increasing service levels by offering new features.

### Web Print

As a core feature of PrintLimit Pro, Web Print enables printing from unmanaged, workgroup or user-owned devices, such as laptops and netbooks, without the overhead of installing printer drivers and managing server authentication.

### Printer Scripting (routing, redirection and user interaction)

Advanced Scripting increases the functionality of PrintLimit Pro beyond what the current interface provides by allowing you to create JavaScript based recipes that fit your environments print policy requirements. You can perform complex tasks such as:

- Display a popup message if a user forgets to select duplex on large jobs.
- Show a dialog displaying environmental impact statistics about their job, such as, the amount of carbon dioxide equivalent greenhouse gases produced.
- Prompt the user to confirm large jobs before printing.
- Automatically route large jobs to more efficient high volume printers.
- Giving discounts during off-peak times.
- Least-cost routing - suggesting a more cost effective printer.

### Environmental Impact Reporting

Do your users have any idea of how much they print, the impact on printing and how they compare against the company average? Consider deploying some of PrintLimit Pro's environmental impact features. This could take the form of simply running an environmental impact report and presenting the figures in a company/organization newsletter, or could be as visible as pushing out a desktop widget that allows users to monitor their user in real-time.

### Scheduled Reporting

Using print management software is not just about limiting usage, it is also about educating users and providing stake holders with the right information. Now that PrintLimit Pro is collecting data, why not turn that data into information by implementing some of the 80+ scheduled reports already available.

## **One-click Reports**

Get access to the most important data in real-time - straight from your web browser, from anywhere on your network

## **Ad-hoc Reports**

Create reports with custom data by specifying date ranges, filtering and sorting by the data available. Great to give you different perspectives on printing usage

## **Schedule / Email Reports**

Create reports that will be regularly generated and emailed to members of your organization or scheduled to be saved to disk. Great for sending regular reports to managers without even needing to compile it first

## **Backups**

Expect the worst and plan for it! As with any application, it is important to ensure that backups are performed regularly. PrintLimit Pro includes a built-in backup process that saves the state of the database to a file. The in-built backup functionality is designed to complement (not replace) a good system-wide backup policy and procedure.

## **Delegating Administration Privileges**

In most PrintLimit Pro environments there will be multiple users who will require some level of access to the system. By using the built-in "admin" account, these users will have access to all parts of the PrintLimit Pro system. Why not spend the time to assign administrator access to certain users or groups of users providing a better user experience and also guaranteeing privacy for those who require it.