

PaperCut Xerox Network Accounting Manual

Contents

1	Overview	3
1.1	Consistency:.....	3
1.2	Integration:.....	3
1.3	Rate of development:.....	3
1.4	Vendor Neutral:.....	3
1.5	Security:.....	4
2	Installation	5
2.1	Xerox Device Compatibility	5
2.2	Requirements	5
2.3	Setup Procedure	6
2.3.1	Introduction.....	6
2.3.2	Networking/Firewall Configuration.....	6
2.3.3	Configure Accounting Settings	6
2.3.4	Configure Field Names and Password/PIN Masking	8
2.3.5	PaperCut Settings	8
2.3.6	Additional Network Security (optional).....	9
3	End User Information	11
3.1	Logging in with Username and Password.....	11
3.2	Logging in with Identity Number and Optional PIN	11
3.3	Selecting Shared accounts using the account code	11
4	Post-install testing	13
4.1	Test Preparation	13
4.2	Scenario 1: Standard copying	14
4.3	Scenario 2: Copying with account selection.....	15
4.4	Scenario 3: Print release.....	17
4.5	Scenario 4: Scanning and faxing	18
5	Configuration	19
5.1	Device Function	19
5.2	Authentication Methods	20

- 5.3 Customizing Text and Messages..... 21
- 6 Known Limitations and Security 22
 - 6.1 Zero Stop 22
 - 6.2 User Interface 22
 - 6.3 Bypassing the System 22
 - 6.4 No support for card readers for authentication..... 23
- 7 Advanced Configuration 23
 - 7.1 Config Editor 23
 - 7.2 Setting an explicit PaperCut Server Network Address 24
- 8 How it works 26
- 9 FAQ & Troubleshooting 26



This manual covers Xerox Network Accounting setup. For general PaperCut MF documentation, please see the [PaperCut MF manual](#).

1 Overview

This manual provides an overview of the installation, configuration and operation of PaperCut's embedded software MFD (Multi-Function Device) solutions. Today's MFDs are smarter – they have touch screens and offer the ability to run applications directly on the device. The goal of PaperCut Software's embedded MFD solution is to leverage these smart devices and to provide walk-up copier users with the same set of rich application features provided in the print control area. These include:

- End user authentication including integration with single sign-on environments
- Monitoring and control of photocopying, scanning and faxing (quotas, charging, allocation and logging)
- Allocation of copying, scanning and faxing to accounts/departments/cost-centers/projects
- Release jobs from a hold/release queue (secure printing)
- Group based access control: Limit access to the device to members of selected user groups.

Highlights of the embedded solution include:

1.1 Consistency:

The embedded solutions are developed in-house by the PaperCut Software development team. This ensures that the copier interface is consistent with the workstation print interface, meaning users only have to learn one system.

1.2 Integration:

PaperCut is a single integrated solution where print, internet and copier control are all managed in the one system. Users have a single account and administrators have the same level of reporting and administration for all services. The embedded solution interacts with the PaperCut server using a Service Oriented Architecture (SOA) and web services based protocols.

1.3 Rate of development:

PaperCut is developed under a release-often policy where new features are made available to users as soon as they are complete. Unlike hardware based solutions, new versions can be delivered to users regularly as software updates.

1.4 Vendor Neutral:

PaperCut remains true to its vendor neutral stance. All embedded solutions are equal and support all server OS's including Windows, Linux and Mac.

1.5 Security:

A large percentage of PaperCut's user base is in Education environments where security is important. All embedded solutions are developed with security in mind. Where security objectives can't be satisfied, any deficiencies are fully disclosed.

2 Installation

This section covers the installation of the PaperCut embedded application for compatible Xerox devices. The embedded application will allow the control, logging and monitoring of walk-up off-the-glass copier usage and may serve as a print release station for network prints (for information on just tracking network printing see the PaperCut user manual).

2.1 Xerox Device Compatibility

PaperCut can support any Multifunction Xerox device that has the “Xerox Network Accounting” module enabled (Network Accounting is also known as JBA accounting). The “Network Accounting” module is often included with the device, but for some devices you need to have this enabled by your Xerox supplier. Please contact your Xerox supplier for details.

Xerox supply different device ranges in different regions:

- Asia Pacific (Fuji Xerox) – support Network Accounting.
- Other regions (Xerox) – support the improved “Xerox Secure Access” feature that provides improvements over “Network Accounting”. See the “PaperCut Xerox Secure Access Manual” for more information. Some older Xerox devices only support “Network Accounting”. To check if your device supports “Secure Access”:
 1. Login to the device web interface
 2. Go to the security/authentication settings (Properties > Security > Authentication).
 3. in the “Login Type” option , check if “Xerox Secure Access” is an option.
 4. If “Xerox Secure Access” is supported, see the “Xerox Secure Access Manual”.

Secure Print Release and Find-Me printing is also supported on Xerox devices. The “automatically release all jobs on device login” option is supported on all devices. This works by automatically releasing print jobs when a user logs into the device.

2.2 Requirements

Ensure that the following points are checked off before getting started:

- PaperCut is installed and running on your network. Please see the ‘Introduction -> Quick Start Guide’ section of the PaperCut user manual for assistance.
- Your Xerox MFD requires that the “Network Accounting” is installed/enabled including off-box authentication support. (Network accounting is also known as JBA accounting or off-box validation.) You may need to contact Xerox to enable this functionality.
- Have available the network name and IP address of the system running PaperCut (e.g. the print server).
- Ensure that the Xerox MFD is connected to the network.
- Have available the network address of the Xerox MFD. It is recommended that the MFD is configured with a static IP.

2.3 Setup Procedure

2.3.1 Introduction

This procedure describes the setup of the Xerox Network Accounting module. The specific steps, screen layouts and button/label name can differ between device models. However the general process is the same for all devices.

NOTE 1: The screens and menus shown in this document differ between device models. The menus may be located and named slightly differently on different devices.

NOTE 2: Xerox devices also have an embedded web server that provides a convenient administration interface. On some devices the following configuration settings can be made through the device's web administration interface.

2.3.2 Networking/Firewall Configuration

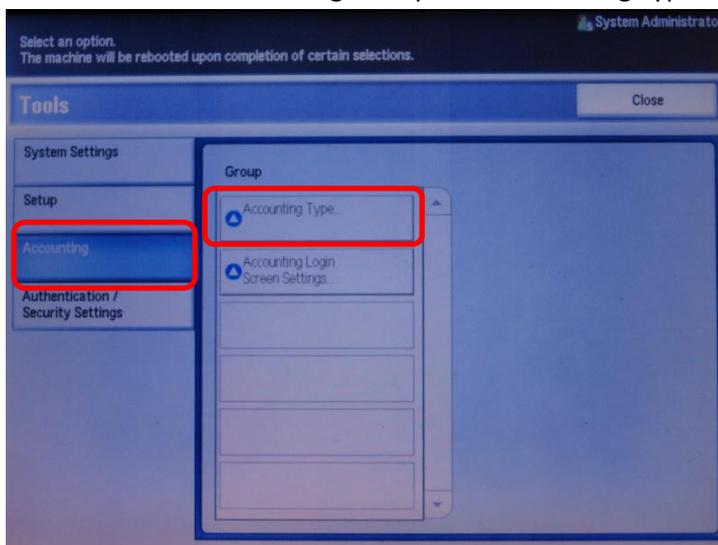
Ensure that your networking/firewall configuration allows:

- inbound connections from the Xerox devices to the PaperCut server on ports 9191 and 9192.
- outbound connections from the PaperCut server to the Xerox device on ports 80 and 443.

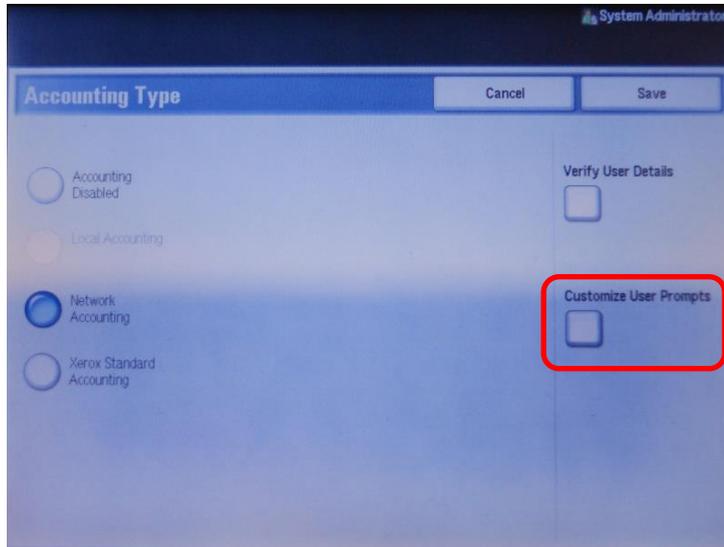
2.3.3 Configure Accounting Settings

To proceed with the configuration:

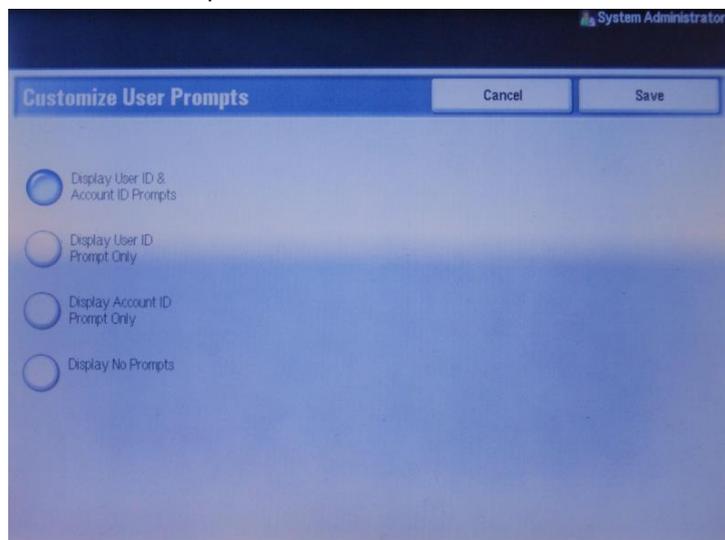
1. On the Xerox device, press the "Log In/Out" button.
2. Log in as system administrator; the standard login data for system administrators are the username "11111" and the password "x-admin" unless previously configured otherwise.
3. Select "Tools" > "Accounting" and press "Accounting Type ..."



4. Select “Network Accounting” option. NOTE: If the “Network Accounting” option is not listed then the “Network Accounting” module may not be installed on your copier. Contact your Xerox supplier to get this installed/enabled.
5. Select the “Verify User Details” option and verify that this is enabled for “Copying”. NOTE: On some models this option is called “Code entry validation”.
6. Click on the “Customize User Prompts” button that appears.



7. Depending on your needs:
 - a. For most configurations you will want to enable both the “User ID” and “Account ID” prompts, because these are used for username/password entry or ID/pin entry. To enable both fields, select “Display User ID & Account ID Prompts”.



- b. If you are using ID authentication without PINs, then you can enable just the User ID prompt, and select “Display User ID Prompt Only”.
8. Press “Save” and “Save” again.

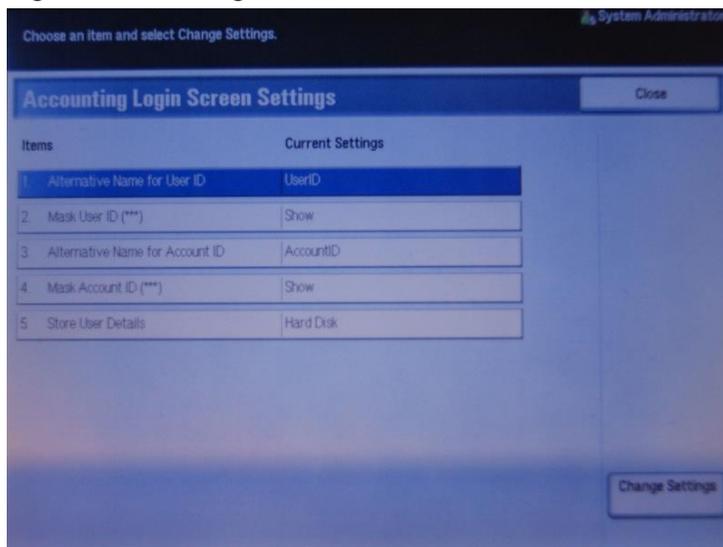
2.3.4 Configure Field Names and Password/PIN Masking

The field names can be altered to better describe their usages. So instead of being called “User ID” or “Account ID”, these fields should be relabeled. E.g. to “Username” and “Password”, or “ID Number” and “PIN”.

You can also configure the fields to be masked with “*” characters to protect sensitive passwords or PINs. It is recommended to enable masking for sensitive fields.

To change field names and enable password/PIN masking:

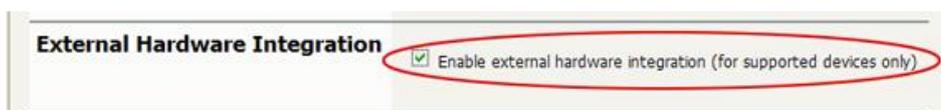
1. On the “Tools” screen, again select “Accounting” and this time select “Accounting Login Screen Settings ...”



2. Select the “Alternative Name for ...” option to configure the field names.
3. Select the masking option for the “Account ID” field from the “Mask Account ID (***)” menu option.
4. Press “Close”.

2.3.5 PaperCut Settings

1. Log in to the PaperCut administration interface using a web browser (e.g. <http://papercut-server:9191/admin>).
2. Navigate to ‘Options -> Advanced’ and ensure the option ‘Enable external hardware integration’ is enabled.



3. Press ‘Apply’.
4. You can use any one of the following options:
 - [2.3.5.1 Install PaperCut MF on multiple devices](#)
 - [2.3.5.2 Install PaperCut MF on each device](#)

2.3.5.1 Install PaperCut MF on multiple devices

PaperCut MF 19.2.0 introduced a feature to create multiple devices in bulk through a CSV file via server commands. In 20.0.0 we added a way to load this CSV file via the PaperCut MF UI. You can find the feature under: PaperCut MF > Devices > Create multiple devices.

Using this feature increases your operational efficiency by significantly reducing the time taken to add devices to PaperCut MF. From version 20.0, this feature also allows for you to add devices to PaperCut MF before such devices are delivered to their installation site, such devices are added with a “Staged” status. The scenario for “Staged” devices applies when the system admin already knows all the device’s attributes prior to its delivery. For more information, see the [Enhanced Deployment Project](#).

2.3.5.2 Install PaperCut MF on each device

To install PaperCut MF on each device:

1. Log in to the PaperCut MF Admin web interface.
2. Navigate to the ‘Devices’ tab.
3. Click “Create Device”.

Create Device
Allows for the creation of an external device, like a photocopier terminal. Supported hardware is required.

Device name (e.g. Staff room copier, Library cash loader)
Library Copier

Hostname / IP
192.168.1.55

Location/Department (Optional)
Library

Type
Xerox (Network accounting / JBA)

Function (e.g. copy, release station, value loader, etc)

Track & control copying
 Track & control scanning
 Track & control faxing
 Enable release station

Additional configuration is available after the device is created.

OK Cancel

4. Enter a descriptive name for the device under “Device name”.
5. Enter the Xerox device’s IP address under “Hostname/IP”.
6. Optionally enter location/department information.
7. From the “Type” drop down, select “Xerox Multi-Function Device”.
8. Under “Function” tick “Track & control copying” and “Enable release station”.
9. Click “OK”.

2.3.6 Additional Network Security (optional)

The MFP communicates with the PaperCut server over the network (e.g. to authenticate users or release print jobs). To provide an additional level of security, PaperCut may be

configured to only allow device connections from a restricted range of network addresses. This ensures that only approved devices are connected to the PaperCut server.

By default PaperCut will allow device connections from any network address. To restrict this to a subset of IP addresses or subnets:

1. Logon to the PaperCut administration web interface at <http://<papercut-server>:9191/admin>
2. Go to the Options → Advanced tab and find the “Security” section.
3. In the “Allowed device IP addresses” field enter a comma-separated list of device IP addresses or subnets (in the format <ip-address>/<subnet-mask>).
4. Press the “Apply” button.
5. Test the devices to ensure they can continue to contact the PaperCut server.

3 End User Information

Due to the limitations of Xerox devices, compromises have to be made when having Xerox devices work with PaperCut.

Logging into the device in order to access the copying and printing functionality requires special attention and system administrators should first familiarize themselves with the procedures and then educate their users about the operation of the device.

The main limitation is the user interface for logging into the device, which is limited to 2 basic text entry fields. These fields are:

- User ID – the first field displayed
- Account ID – the second field display

These fields are used for username/password and ID/PIN entry, and can be renamed through the Xerox configuration settings.

When using shared accounts for department, project, customer billing, the user must enter the account code to charge copying to. However there are no fields available which means the account-code must be entered into the same field as the username or ID number. This is described in detail in section 3.3.

This is a limitation of the Xerox Network Accounting (JBA) module, and is confusing for users.

3.1 Logging in with Username and Password

If the device is configured for username/password authentication then the username is entered in the “User ID” field and the password is entered in the “Account ID” field.

These fields can be renamed to something more appropriate. This is described in the Installation instructions.

3.2 Logging in with Identity Number and Optional PIN

When Identity Number authentication is enabled the Identity Number is entered in the “User ID” field. If the device is configured to require PIN entry, then the PIN is entered in the “Account ID” field.

If no PIN number is required, then the “Account ID” field should be disabled and not displayed to the user.

These fields can be renamed to something more appropriate. This is described in the Installation instructions.

3.3 Selecting Shared accounts using the account code

The Xerox provides a limited login interface that only provides 2 data entry fields, and these are used to enter the username/password or the ID/PIN. To enter an account-code, this

must be entered in the same field as the username or ID number, separated by a period (.), hash (#), or asterisk (*) character. The period can be entered via the on-screen keyboard whereas the hash and asterisk characters can be conveniently entered via the keypad located on the device.

For example, for the user “john” to login and select an account with code “789”, the following are examples for correct input in the “User ID” prompt.

john#789

john*789

john.789

4 Post-install testing

After completing installation and basic configuration it is recommended to perform some testing of the common usage scenarios. This important for two reasons:

1. To ensure that the embedded application is working as expected
2. To familiarize yourself with the features and functionality of PaperCut and the embedded application.

This section outlines four test scenarios that are applicable for most organizations. Please complete all the test scenarios relevant for your site.

4.1 Test Preparation

To complete these tests it is recommended you use two test users so that each can be configured differently. These users are:

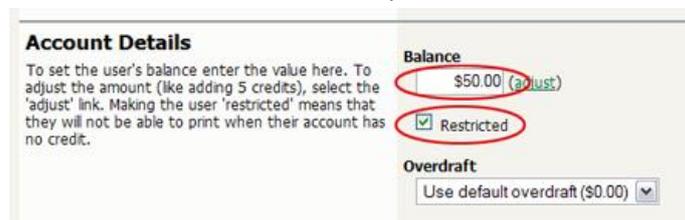
- ‘testusersimple’ – is used to perform basic copier monitoring and control and to perform print release tests.
- ‘testuseradvanced’ – is used to perform copier monitoring and control with the account selection enabled (i.e. to charge copying to accounts/departments/cost-centers/etc).

To setup these users in PaperCut:

1. Create the ‘testusersimple’ and ‘testuseradvanced’ users in your Active Directory or LDAP directory.
2. Login to the PaperCut’s admin web interface
3. Go to the “Options->User/Group sync” page and press “Synchronize Now”.
4. Once the sync is complete, the users will be added to PaperCut.

The next step is to configure the users. To configure ‘testusersimple’:

1. In PaperCut, select the “Users” tab
2. Select the ‘testusersimple’ user.
3. Set the user’s balance to \$50.00 and verify the account is set to “Restricted”.



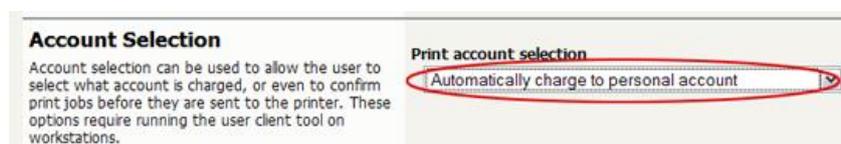
Account Details
To set the user's balance enter the value here. To adjust the amount (like adding 5 credits), select the 'adjust' link. Making the user 'restricted' means that they will not be able to print when their account has no credit.

Balance
\$50.00 (adjust)

Restricted

Overdraft
Use default overdraft (\$0.00)

4. Verify that this user is set to “Automatically charge to personal account” in the “Account selection” options.



Account Selection
Account selection can be used to allow the user to select what account is charged, or even to confirm print jobs before they are sent to the printer. These options require running the user client tool on workstations.

Print account selection
Automatically charge to personal account

5. Press the “OK” button to save.

To configure ‘testuseradvanced’:

1. In PaperCut, select the “Users” tab
2. Select the ‘testuseradvanced’ user.
3. Change the “Account Selection” option to “Standard account selection popup” and enable all the account selection options.



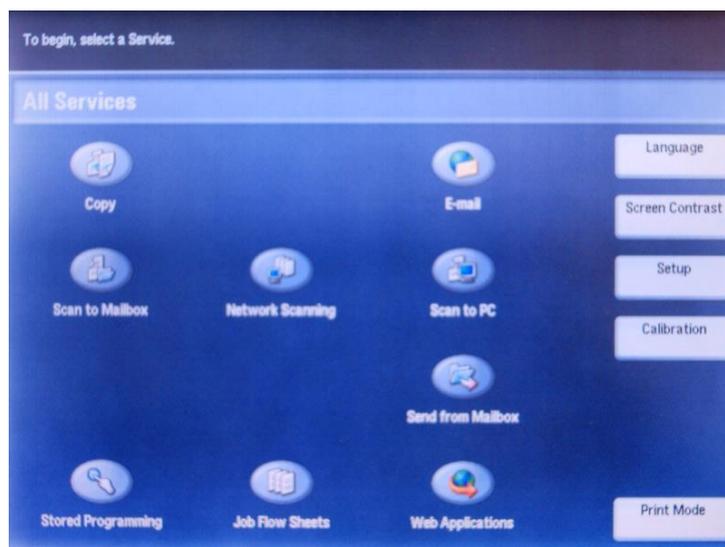
4. Press the “OK” button to save.

4.2 Scenario 1: Standard copying

Standard copying involves monitoring/charging printing to a user’s personal account. This is the most commonly used for student printing or basic staff monitoring. Users can also be configured for unrestricted printing, which is commonly used for staff/employee use.

At the photocopier:

1. The photocopier should be showing the services screen as shown below, if not press the “All Services” button at the side of the screen:



2. Press “Copy”.
3. Enter the username (“testusersimple”) and password in the login fields.

4. At this point the copier will be enabled for usage.
5. Follow the onscreen instructions and perform some test copying, i.e. press the “Copy” key on the device and perform a copy as normal.
6. Once completed copying press the “Logout” button on the device’s keypad.

Back in the PaperCut application verify that the copier activity was recorded and the user’s account deducted.

1. Log in to PaperCut.
2. Select the device from the “Devices” tab.
3. Select the “Job Log” tab. This will list all recent copying activity on the copier. The copying just performed as the test user should be listed. Verify the details of the copy job that was just performed.

Usage Date ▼	User	Charged To	Pages	Cost	Document Name	Attribs.
Apr 16, 2008 2:59:30 PM	testusersimple	testusersimple	2 (Color: 0)	\$0.20	[copying]	A4 (ISO_A4) Duplex: No Grayscale: Yes

4. Click on the user’s name in the user column to view the user’s account details
5. Select the “Job Log” tab to display all print/copy activity for the user.
6. Select the “Transaction History” tab and verify that the cost of the photocopying was deducted from the user’s account.

Transaction date ▼	Transacted by	Amount	Balance after
Apr 16, 2008 3:05:40 PM	[system]	-\$0.20	\$49.80
Apr 16, 2008 3:04:15 PM	admin	\$40.20	\$50.00

4.3 Scenario 2: Copying with account selection

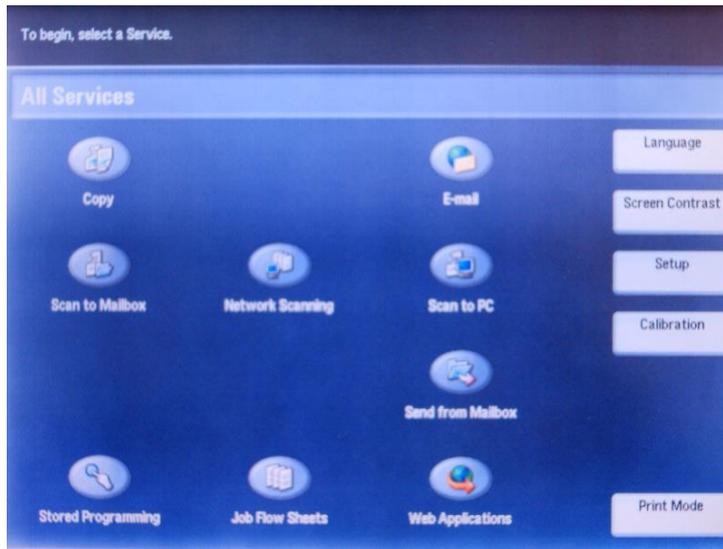
For this test the Account ID prompt has to have been enabled as described in the “Installation” chapter of this manual.

Firstly a test account should be created:

1. Log into PaperCut, select the “Accounts” tab.
2. Select the “Create a new account...” action link on the left.
3. Enter an account name “Test Account 1”.
4. Enter PIN/Code “2233”.
5. Select the “Security” tab and allow all users to access that account by adding the “[All Users]” group.
6. Press “OK”.

At the photocopier:

1. The photocopier should be showing the services screen as shown below, if not press the “All Services” button at the side of the screen:



2. Press “Copy”.
3. Enter the username and the account code in the first field, separated by either a period, hash (#) or asterisk (*). The hash and asterisk characters can be conveniently entered from the keypad located next to the screen. Here is an example entering the account code of “2233” :
`testuseradvanced#2233`
4. Press “Next”. You will be prompted the users password. Enter the password and press “Enter”.
5. At this point the copier will be enabled for usage. Follow the onscreen instructions and perform some test copying. I.e. press the “Copy” key on the device and perform a copy as normal.
6. Once completed copying press “Logout” button.

Back in the PaperCut application verify that the copier activity was recorded and the user’s account deducted.

1. Log in to PaperCut
2. Select the device from the “Devices” tab
3. Select the “Job Log” tab. This will list all recent copying activity on the copier. The copying just performed as the test user should be listed.
4. Verify the details of the job (i.e. that the job was charged to the selected account).
5. In the log details, click on the “Charged To” account name to view the account’s details.
6. Selecting the “Job Log” tab will display all print/copy activity for the account, and will show the test photocopying that was performed.

4.4 Scenario 3: Print release

The embedded application may also be used for print release. For full description of PaperCut hold/release queues and release stations, please read the PaperCut manual.

This Xerox supports “Auto releasing jobs on login”. This feature will release all jobs awaiting release at the device the user logs in to.

Skip this scenario if hold/release queues will not be used at your site.

To perform print release testing a hold/release queue must be enabled:

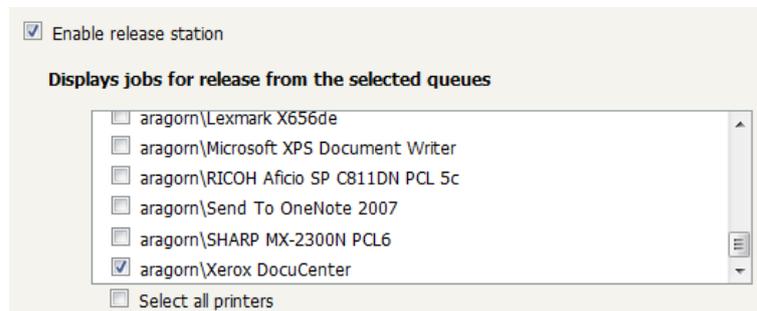
1. In PaperCut, select the “Printers” tab.
2. Select the print queue (i.e. not the ‘device’) for the Xerox MFD that will be used for testing.
3. Enable the “Hold/release queue” option.



4. Press OK/Apply to save the changes. All printing to this queue will now be held until released by a user.

The photocopier device must also be enabled as a “Print Release Station”:

1. In PaperCut, select the “Devices” tab.
2. Select the Xerox MFD’s device.
3. Under “Device Function” tick “Enable release station”.
4. Select the print queue that was enabled for hold/release above. The Xerox device will allow jobs on the selected queues to be released.



5. Enable the “Automatically release user's jobs upon login” option below the printer list.
6. Press “OK” to save.
7. Login to a computer workstation as ‘testusersimple’.
8. Print a few jobs to the print queue that was configured above. The jobs will be held in the hold/release queue.

9. Confirm that the jobs are held, by checking that the jobs are listed in the “Printers -> Jobs Pending Release” page of the PaperCut administration interface.
10. Confirm that the username is ‘testusersimple’.

At the device:

1. Intitiate the login process.
2. Enter the username (‘testusersimple’) and password in the login fields.
3. If the login is successful, the pending print jobs will now be sent to the printer.
4. Once completed press the “Logout” button on the device keypad.

4.5 Scenario 4: Scanning and faxing

Xerox devices can also scan documents and send them by email. If a phone line is attached, they can send faxes. You can enable tracking scanning and faxing. Users can be prevented from scanning or faxing when they are out of credit.

To enable tracking of scans and faxes:

1. In PaperCut, select the “Devices” tab.
2. Select the MFD device.
3. Under “Device function” tick “Track & control scanning” and tick “Track & control faxes”.
4. Select the charging type “advanced” in both cases and set some numbers for page costs and thresholds. The cost after the threshold should be lower than the standard cost as it represents a volume discount. As an example, the screen shot below shows that the first page of a fax is charged at \$0.20 and any subsequent page at \$0.10.

The screenshot displays two sections for tracking settings. The first section, 'Track & control scanning', has a checked checkbox and a 'Charging type' dropdown set to 'advanced'. Below it are three input fields: 'Page cost' at \$0.10, 'Page cost after threshold' at \$0.05, and 'Page count threshold' at 1. The second section, 'Track & control faxing', also has a checked checkbox and a 'Charging type' dropdown set to 'advanced'. Its input fields are: 'Page cost' at \$0.20, 'Page cost after threshold' at \$0.10, and 'Page count threshold' at 1.

At the photocopier, log in and scan a few documents and send a few faxes. At the end, make sure to press the “Logout” button on the device’s keypad.

In the PaperCut administration interface verify that the scan and fax activities were recorded and the user’s account was deducted. This can be done as follows:

1. Log in to the PaperCut administration interface.
2. Select the device from the “Devices” tab.
3. Select the “Job Log” tab. This will list all recent activity on the copier, including copying, scanning and faxing. The jobs just performed as the test user should be listed. Verify the details of the jobs that were just performed.

Usage Date ▼	User	Charged To	Pages	Cost	Document Name	Attrib
Dec 9, 2009 11:45:23 AM	testusersimple	testusersimple	2	\$0.30	[fax]	
Dec 9, 2009 11:44:35 AM	testusersimple	testusersimple	5	\$0.30	[scanning]	

4. Click on the user’s name in the user column to view the user’s account details.
5. Select the “Job log” tab to display all activity for the user.
6. Select the “Transaction History” tab and verify that the cost of the scans and faxes was deducted from the user’s account.

Transaction date ▼	Transacted by	Amount	Balance after
Dec 9, 2009 11:45:23 AM	[system]	-\$0.30	\$4.40
Dec 9, 2009 11:44:35 AM	[system]	-\$0.30	\$4.70

5 Configuration

After completing the Installation section and registering the device with PaperCut, it will have been configured with reasonable default settings that are suitable for most environments. This section covers how to change the default settings. All the following settings are available via the device’s ‘Summary’ tab in the PaperCut administration interface.

5.1 Device Function

The device function setting defines which functions will be available on the device and how it will be used. Not all function settings are supported on all devices.

Device function (e.g. copy, release station or both)

Track & control copying

Page cost
 (simple)

Track & control scanning

Track & control faxing

Enable release station

Each device function is discussed in the following table.

Device Function	Description
Track & control copying	The device will track walk-up off-the-glass copying.
Track & control scanning	The device will track scanning such as scan-to-email or scan-to-file.
Track & control faxing	The device will track the sending of faxes.
Enable release station	The device will act as a print release station.

NOTE: Release station functionality is currently only available on Xerox models that support the embedded web browser. See section 2.1 Xerox Device Compatibility.

5.2 Authentication Methods

PaperCut supports a number of different ways to authenticate users who walk-up to the devices to perform copying. The default authentication method is username and password authentication.

The available authentication methods can be modified in the 'External Device Settings -> Authentication methods' section.

Authentication methods

Username and password

Identity number
 Require PIN

Swipe card

Automatically login as user

Authentication methods available for a device

Not all authentication methods are supported on all devices. A grayed-out option indicates that the option is not supported on this device.

Each authentication method is discussed in the following table.

Authentication Method	Description
Username and password	The user may use their domain/network username and password to log into the device.
Identity number	The user may log in with their identity number. Identity numbers are convenient when usernames are long or cumbersome to enter. For example, rather than entering a username like 'john.smith.001', it may be more convenient to enter an employee ID of '1234'. See the PaperCut user manual for information about user identity numbers, including importing identity numbers from an external source.
Identity number -> Require PIN	When a user logs in with their identity number, they must also provide their associated PIN. This provides additional security for identity number logins.
Automatically login as user	Specifies that this device should always automatically log in as the given user. This option overrides all other authentication methods

Description of authentication methods

5.3 Customizing Text and Messages

PaperCut allows some text that appears in the device to be customized. The custom text might include instructions or terminology that is more appropriate for the site. An example of text that is customizable is the “welcome text” that displays before the user logs in to the device.

The text can be customized by editing the device configuration from the PaperCut administration interface. For more details see the Advanced Configuration section.

6 Known Limitations and Security

The Xerox environment has a number of limitations that have impacted on functionality and security.

6.1 Zero Stop

In an ideal implementation, PaperCut would be able to control exactly how many pages a user can copy and always prevent the user from overdrawing their account. The Xerox Network Accounting environment has some limitations in controlling copying.

PaperCut will only enable the copier when an authorized user has authenticated at the device (and has enough credit to begin copying). If a restricted user attempts to login and they have no available credit, they will be denied access to photocopying. However, the Xerox environment has the following limitation:

- Once the user starts copying it is not possible to forcibly stop the copying and log them out of the system.

The implication of this limitation is:

- Restricted users with available credit can start copying and continue copying even once they have used their credit. Their copier usage will still be recorded in PaperCut and the cost will be deducted from their account (which will go into negative balance).

This is a limitation of the Xerox Network Accounting module.

6.2 User Interface

The user interface displayed during the user login on the Xerox device is very limited, as follows:

- Only 2 fields are available for device login. No customization of these fields is available. To allow users to login we need to accept up to 3 pieces of information, and there is only 2 fields. This means we use need to overload one field to enter 2 pieces of information. e.g. the username and the account code, entered like "username#account-code". See section 2 for more information.
- No facility to display login error messages when a user fails to login. This limitation means there is no way to communicate the reason for a failed login. Possible reasons for a failed login include:
 - Invalid username/password.
 - User selected an unknown shared account.
 - User selected a shared account they were not permitted to use.
 - The user did not have available credit in their account.
- No facility to display instructions/help for the user.

These are limitations of the Xerox Network Accounting Module.

6.3 Bypassing the System

It is important that the administrators take care to prevent users from bypassing the system and directly accessing the copier.

To ensure the system is secure administrations should take the following precautions:

- The copier’s built in admin password should be changed from the default and always kept secure.

6.4 No support for card readers for authentication

Unfortunately the Xerox Network Accounting / JBA system does not support card-readers for authentication. This is a limitation of the Xerox hardware and embedded environment.

PaperCut cannot support card-readers on Xerox’s unless it is supported in future Xerox models.

7 Advanced Configuration

7.1 Config Editor

The common configuration options for a device in PaperCut are available on the device’s ‘Summary’ tab, and are discussed in more detail in the Configuration section. This section covers the more advanced or less common configuration options which are available via the ‘Advanced Config’ tab in the device details screen.

Config name	Description
ext-device.card-self-association.use-secondary-card-number	Select whether user self-association should occupy the primary or secondary card number. It overrides the global setting unless the keyword "GLOBAL" is specified. This is useful when there is a mix of different non-configurable card readers that read different numbers from an ID card. Set to "Y" to use the secondary card number, "N" to use the primary card number. Default: "GLOBAL" to defer to the global configuration option.
ext-device.xerox.show-account-confirmation	Determines whether the confirmation screen is displayed before granting access to the device. Set to “N” to disable the welcome screen.
ext-device.xerox.limit-reference.paper-size and ext-device.xerox.limit-	PaperCut will deny device access to restricted users who do not have enough balance to copy. To determine if a user has enough balance to copy a reference copy is required. By default PaperCut checks if the user has enough balance to copy one single sided Letter (North America) or A4 (worldwide) page. In some situations it may be desirable to change the reference copy, such as when the device allows smaller page sizes like A5.

reference.duplex	Default for ext-device. xerox.limit-reference.duplex: N (No) Default for ext-device. xerox.limit-reference.paper-size in North America: Letter Default for ext-device. xerox.limit-reference.paper-size worldwide: A4
------------------	---

ext-device.xerox.auth-mode	This setting determines how PaperCut interprets the login details entered by the user. By default PaperCut tries multiple ways to validate the user data (i.e. described in Section 3.3 plus a legacy interpretation). In some situations this may lead to unexpected behavior. This setting allows changing this behavior. Default: "DEFAULT" (which uses this combined approach) This can be set to 1 or 2 as follows: <ul style="list-style-type: none">• "2" – interprets fields as described in Section 3.2 i.e. user/ID in field 1 and password/pin in field 2• "1" – uses the legacy approach when interpreting fields. i.e. username/id and password/pin in field 1 (separated by "#"), and account codes in field 2.
----------------------------	--

7.2 Setting an explicit PaperCut Server Network Address

The copier connects to the PaperCut server to validate user credentials, display print jobs for release, etc. The device makes inbound network connections to the PaperCut server using a network address of the PaperCut server. By default PaperCut will use the server's IP address (if the server has multiple IPs (i.e. multi-homed) then PaperCut will select one of them), but on some networks this address may not be publicly accessible from other parts of the network.

If the PaperCut server has a "public" IP address or DNS name then this can be used instead, which allows the copiers to use the "public" network address instead of the IP address that PaperCut detects. To do this:

- Login to PaperCut
- Go to the "Options" tab.
- Select "Config Editor (advanced)", from the action links on the left.
- Find the "system.network-address" setting.
- Enter the public network address for the PaperCut server.
- Press the "Update" button next to the setting and confirm the setting is updated.

When connecting devices to a PaperCut site server, you can configure the sites' "Network address used by devices":

- Login to PaperCut
- Go to the "Sites" tab.
- Select the site to edit.

- Change the “Network address used by devices”.
- Save the site details.

To have either of these changes take effect immediately, restart the PaperCut Application Server service (i.e. on Windows use: Control Panel->Admin Tools->Services).

8 How it works

The following section gives a brief overview of the internal workings of PaperCut's on-board solution for Xerox devices. It's provided as background information and may be useful for technical administrators troubleshooting problems.

Typical function workflow:

1. A user logs into the MFP via the panel. The MFP is configured to contact PaperCut (via SOAP web services) to verify login information (as opposed to using the in-built PIN authentication in the device).
2. The user ID and password is validated and devices access is granted as appropriate.
3. If "release jobs on login" is enabled any waiting jobs are immediately queued for printing. (called secure print release or find-me printing)
4. If the user performs any device functions such as Copy, Fax or Scan, these are recorded against the user ID in the device's onboard logs.
5. At regular periods (e.g. every minute) PaperCut contacts the device looking for new log entries (logs are downloaded via HTTP using JBA network accounting).
6. Any new log entries are analyzed and recorded in PaperCut's usage database. Any cost associated with the usage is charged from the user's account (or their selected Shared Account).

9 FAQ & Troubleshooting

PaperCut shows an error status for the device. What could cause this?

In the "Devices" list the Xerox device may appear with an error status (hover your mouse over the status to see the full status message). The status message will help understand the cause of the error. The most common cause of problems is due to a networking issue, to resolve:

- Verify that the device network address (or IP) is entered correctly in PaperCut
- Verify that networking and firewalls allow PaperCut to establish a connection to the device on ports 80 and 443.
- Verify that networking and firewall settings allow the device to establish connections to the PaperCut server on ports 9191 and 9192.

Another common cause of errors is that "Network Accounting / JBA" has not been enabled/configured on the device. Ensure that the Network Accounting is enabled as described in section 2.3.

Another possible cause of problems is if the device firmware does not support the "Off-box validation" features required by PaperCut. This feature should be available for recent Xerox copiers supporting "Network Accounting", however sometimes a firmware upgrade is required.

How often does PaperCut poll for accounts?

Account validation is done in real-time using the Xerox authentication web services methods. Hence any changes made to Shared Accounts, user rights, or user passwords are available immediately.

How often does PaperCut poll for job activity?

After PaperCut detects a login it will check for the completion of the job(s) every 2 minutes. Hence on average the job will appear in, and be charged by PaperCut on average no longer than a minute after the job completes and the user logs out of the copier.

During no activity, the copier status is checked every 10 minutes.

Can I use a hostname rather than an IP address in the URL's when configuring the release station settings?

Using a hostname relies on the MFD using your DNS and ensuring that your DNS is correctly configured. The quickest failsafe option is to use the server's IP. If you have advanced networking skills, you may wish to investigate using a hostname.

The device displays an error when authenticating the user.

The most likely cause of problems is that the device cannot establish a connection to the PaperCut server. Make sure that your networking/firewalls allow network connections from the device to the PaperCut server on ports 9191 and 9192.

If your PaperCut server has multiple IP addresses or you use NAT on your network, see section 7.2 on how to explicitly configure the PaperCut server's network address.

The device status shows "Connecting to server '<servername/ip>'?"

This indicates that the web browser is unable to connect to the PaperCut server over the network.

Common causes of this problem are:

- The PaperCut application server is not running.
- There are firewalls or network routing configuration that is stopping the network connection being established. Check that for firewalls on the PaperCut server or with your network administrator.
- There is a network outage that is stopping the connection being established. Try accessing the web interface on the Xerox to check that a network connection can be established.

I see an error on the Xerox LCD screen?

This may indicate networking issue, a configuration issue, or maybe a software bug. Re-check your settings and restart the MFD (i.e. power off and power on the copier). If problems continue, contact your reseller or Authorized Solution Center. You can find their contact information in your PaperCut Admin interface on the **About** page.

My users have symbols in their passwords and/or it's difficult to enter their usernames. What options do I have?

The Shift button will offer addition symbols. Use of this is however cumbersome. You may wish to instruct your users to change their network passwords so they only contain standard characters. Another option is to enable the ID/Pin authentication option. This may be used in addition or as a replacement to username and password authentication and can be limited to numbers only.