

## Print Credits

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### Overview

The Print Credits product integration enables users to manage their printing activities.

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### Vendors

The Print Credits product integration is supported by the Pharos Uniprint and [PaperCut](#) vendors.

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### User Experience

The following section describes information relating to the user experience for the Print Credits product integration.

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### User Activities

- Users can check their print credit balance.
  - Users can add to their print credit balance.
  - Users can track transactions, such as deposits and payments, both current and past.
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### Authentication

The Print Credits product integration requires the user's identifier from the vendor's system. This is obtained with the token based authentication attributes.

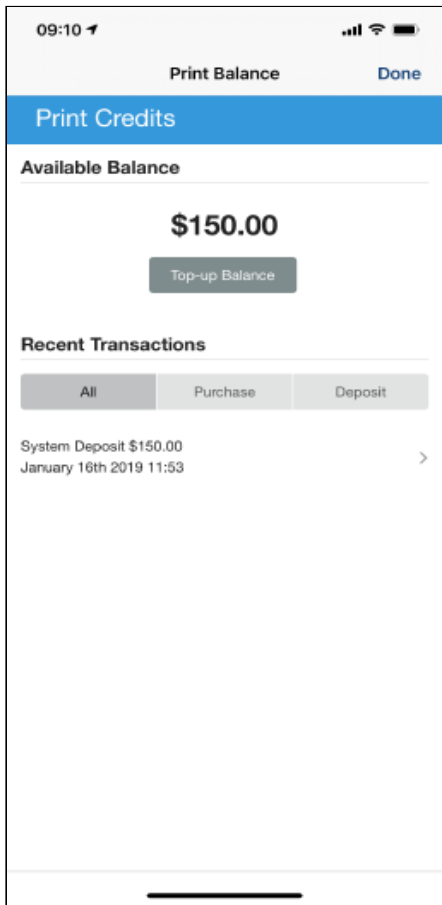
The connection to the vendor is handled as part of the generic API Configuration under the Vendor section. The first part of the API Configuration details the URL to which to connect and any parameters that are required. The second part relates to the API Authentication for the URL, which is vendor-specific, and could also be specific to the vendor instance the client is running.

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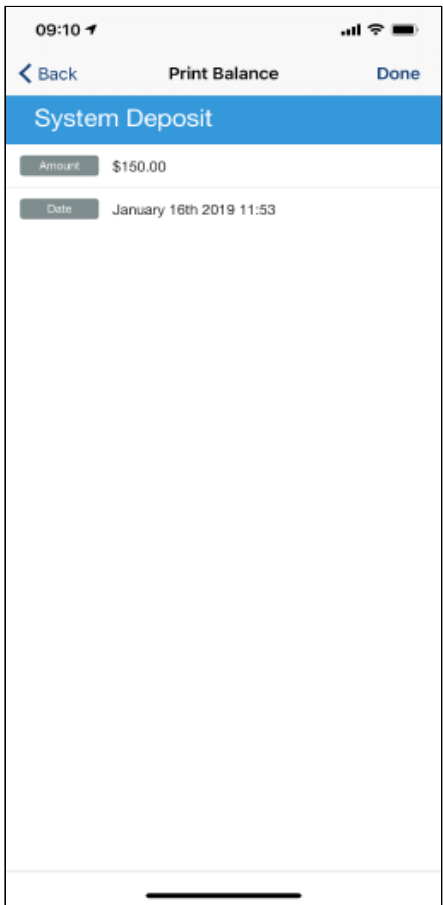
### Screenshots

The following is an overview of the Print Credits product integration user interface for a reference when configuring it:

**For Pharos Uniprint:**



**Print Credits Landing Page**



**Print Credits Transaction Page**

<p><b>Print Credits Available Balance</b></p>	<p><b>Print Credits Deposits</b></p>

**Note**

For the PaperCut vendor, only the balance is displayed.

## Technical Overview

The following section describes technical information for the Print Credits product integration.

### Prerequisites

The following prerequisites are required to configure the Print Credits product integration:

- User identifier mapping – If you have CMAuth configured, map the relevant vendor ID in the integration profile (Additional Mapping), for example: `bannerId=employeeID`, where `employeeID` is the relevant user attribute on the vendor’s backend system. If you have LDAP configured, verify that the relevant attribute is returned as an attribute from the LDAP response.
- campusM IP addresses should be added to an allow list on the PaperCut/Pharos server. For more information refer to

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## Pharos Uniprint

- Example hostname: `https://{HOST}/pharosportlet/?netID={userId}`
- Set the `userId` attribute as a URL Query, as as a Token Property whose token property name corresponds to the SAML attribute for the user's Pharos ID, for example, `employeeID`.
- The parameter name needs to match the value entered in the **URL to retrieve the information** field.
- The following is an example of a JSON response.
- Uniprint requires no Path Parameters or General Headers.
- Uniprint currently passes the end user's vendor ID as a URL Query Parameter. This needs to be set in the URL and added as a query parameter with a matching parameter name.
- The Uniprint instance that campusM accesses has "No Auth" currently, but in the future this could be different. Authentication will differ per client instance.

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## PaperCut

campusM calls PaperCut `api.getUserAccountBalance` to retrieve the PaperCut balance, with a token and the user.

- Token – a specific token is required for each system. The token needs to be configured in PaperCut.
- User – the `networkUser` in PaperCut.
- `LookUpUserNameByEmail` – retrieves the `networkUser` in PaperCut according to email.

For more information about IPs Allowed Lists on PaperCut server refer to [PaperCut Security documentation](#).

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## Configuration

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### Configuration for Pharos Uniprint Vendor

The following table describes the configuration options available for the Pharos Uniprint vendor.

Note that while the majority of these fields are not mandatory, they are displayed with their default values unless otherwise stated.

Configuration Option	Description	Mandatory	Data Type	Default	Example
Enable Product Integration	Select to enable the product integration on the user's campusM app.	No	Check box		
Product Integration Description	A description of the product integration for internal use	Yes	String		Print Credits
Screen Title	Appears in the top header (of the	No	String	Print Credits	

Configuration Option	Description	Mandatory	Data Type	Default	Example
	integration, in the app).				
Primary Theme Color	Used for the Screen Title header and other header elements.	No	Hex code	#444444	
Secondary Theme Color	Used for the Grade block headers.	No	Hex code	#6f8ea4	
Page Title	This is shown at the top of the page	No	String	Print Credit	
Available Balance Header	This is shown at the top of the available balance section	No	String	Available Balance	
Top-Up Button Text	If the top-up button link is enables, this controls the text the user sees	No	String	Top-Up Balance	
Recent Transactions Header	This is shown at the top of the recent transactions section	No	String	Recent Transactions	
All Filter Text	This is used as a label for the filter	No	String	All	
Purchase Filter Text	This is used as a label for the filter	No	String	Purchase	
Deposit Filter Text	This is used as a label for the filter	No	String	Deposit	
Purchase Text	This is used as the text for the transaction description	No	String	Print Purchase	
Deposit text	This is used as the text for the transaction description	No	String	System Deposit	
Load More Text	The label for the load more button	No	String	Load more	
No Transactions Text	The label for the error message when there are no transactions to display	No	String	No transactions to display	
Error Message Text	The label for the error message when the service is inaccessible	No	String	There was an error accessing the service.	
Amount Label	The label for the amount in the transaction details page	No	String	Amount	
Date Label	The label for the date in the transaction details page	No	String	Date	
Show the top-up button link	This will redirect the user out of the campusM app to the target URL	No	Boolean	True	
Top-up page URL	The URL to redirect to in order to top up the balance	No	URI	<a href="https://www.google.com/">https://www.google.com/</a>	
Enable transactions filter	This will enable filtering of the transactions by date	No	Boolean	False	

Configuration Option	Description	Mandatory	Data Type	Default	Example
Display Transactions Period	The period of time to display the transactions from	No	Object	last7Days	
Load More Period	The period of time to load more transactions from	No	Object	7DaysMore	
Input Date Format	The format of the dates coming back from the API	No	String	mm/DD/YYYY HH:mm:ss A	
Display Date Format	The format to display any dates in, throughout the integration	No	String	MMMM Do YYYY HH:mm	
Show Payment Amount	Choose if to display the payment amount in the purchase/deposit page	No	Boolean	True	
Show Payment Date	Choose if to display the payment Date in the purchase/deposit page	No	Boolean	True	
Vendor Name	Uniprint (Pharos)	Yes	Object	-	
URL to retrieve the information	The base URL should include path parameters	Yes	URI	n/a	<a href="https://mrm.newschool.edu/pharosportlet">https://mrm.newschool.edu/pharosportlet</a>
Response Content Type	What type of data you're expecting back from this API endpoint.	No	String	JSON	
Response Object Type	What you expect as the top-level object from the API endpoint.	No	String	Object	
URL Query Parameters	Any additional query parameters required by the vendor.	No	Object	See <a href="#">Technical Overview</a>	
URL Path Parameters	Any path parameters required by the vendor.	Yes	Object	See <a href="#">Technical Overview</a>	
General Headers	Any additional headers required by the vendor.	No	Object	See <a href="#">Technical Overview</a>	
API Authentication	Defines the authentication for this vendor.	Yes	Object	See <a href="#">Technical Overview</a>	Basic

## Configuration for PaperCut Vendor

The following table describes the configuration options available for the PaperCut vendor.

Configuration Option	Description	Mandatory	Data Type	Default	Example
Enable Product Integration	Select to enable the product integration on the user's campusM app.	No	Checkbox		
Product Integration	A description of the product integration for internal use	Yes	String		PpaperCut

Configuration Option	Description	Mandatory	Data Type	Default	Example
Description					
Screen Title	Appears in the top header (of the integration, in the app).	No	String	PaperCut	
Vendor Name	PaperCut	Yes	Object	-	
Server	Enter the hostname or IP address of the server hosting the application server. If the protocol is not provided, it is assumed to be http.	Yes	String		<a href="https://myPaperCutHost.com">myPaperCutHost.com</a> https://myPaperCutHost.com
Port	Enter the port number on which the application server is listening	No	Number	9191	8991
Token	Enter the authentication token as configured in PaperCut portal. See the <a href="#">PaperCut Security documentation</a> .	Yes	String		
Currency	Enter the account balance currency	No	String	\$	
User Identifier	Select the source for your user identifier to send in the body of the PaperCut API. Possible values: Username, Token Property, and Constant.	Yes	Drop-down list		
Primary Theme Color	Used for the Screen Title header and other header elements.	No	Hex code	#444444	
Secondary Theme Color	Used for the Grade block headers.	No	Hex code	#6f8ea4	
Page Title	This is shown at the top of the page	No	String	Print Credit	
Available Balance Header	This is shown at the top of the available balance section	No	String	Available Balance	
Top-Up Button Text	If the top-up button link is enables, this controls the text the user sees	No	String	Top-Up Balance	
Recent Transactions Header	This is shown at the top of the recent transactions section	No	String	Recent Transactions	
All Filter Text	This is used as a label for the filter	No	String	All	
Purchase Filter Text	This is used as a label for the filter	No	String	Purchase	
Deposit Filter Text	This is used as a label for the filter	No	String	Deposit	
Purchase Text	This is used as the text for the transaction	No	String	Print Purchase	

Configuration Option	Description	Mandatory	Data Type	Default	Example
	description				
Deposit text	This is used as the text for the transaction description	No	String	System Deposit	
Load More Text	The label for the load more button	No	String	Load more	
No Transactions Text	The label for the error message when there are no transactions to display	No	String	No transactions to display	
Error Message Text	The label for the error message when the service is inaccessible	No	String	There was an error accessing the service.	
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Date Label	The label for the date in the transaction details page	No	String	Date	
Show the top-up button link	This will redirect the user out of the campusM app to the target URL	No	Boolean	True	
Top-up page URL	The URL to redirect to in order to top up the balance	No	URI	<a href="https://www.google.com/">https://www.google.com/</a>	
Enable transactions filter	This will enable filtering of the transactions by date	No	Boolean	False	
Display Transactions Period	The period of time to display the transactions from	No	Object	last7Days	
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Input Date Format	The format of the dates coming back from the API	No	String	mm/DD/YYYY HH:mm:ss A	
Display Date Format	The format to display any dates in, throughout the integration	No	String	MMMM Do YYYY HH:mm	
Show Payment Amount	Choose if to display the payment amount in the purchase/deposit page	No	Boolean	True	
Show Payment Date	Choose if to display the payment Date in the purchase/deposit page	No	Boolean	True	