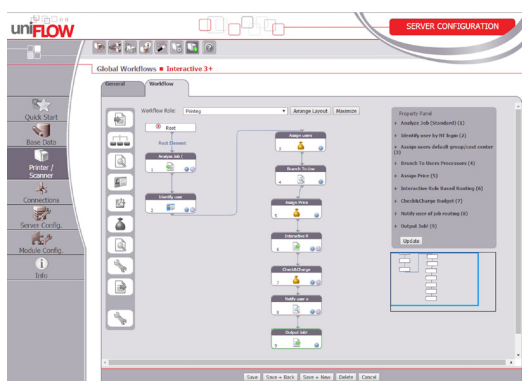


Canon

uniFLOW 2018 LTS: Office Printing



OVERVIEW

uniFLOW 2018 LTS is an open solutions platform designed to manage just about every print, copy, and scan process within an organization. Its wide-ranging feature set covers a range of functions, including accounting, cost recovery, print management, secure printing, mobile printing, print-job routing, advanced scan workflows, device management, and print room management. Developed by NT-ware Systemprogrammierung GmbH and sold exclusively through Canon and approved resellers, uniFLOW is modular, which means businesses need only purchase the functionality they need. The solution supports the needs of all business sizes, from small offices to large corporations. This report discusses how uniFLOW supports the output management needs of front offices.

Product Snapshot

Product: uniFLOW

Version: 2018 LTS

Software Developer: NT-ware Systemprogrammierung GmbH (a Canon Inc. company)

Web: www.uniflow.global

Phone: +49 5403 7243-0

For more information on uniFLOW 2018 LTS: Office Printing products, see BLI's comprehensive coverage at Buyerslab.com/Solutions.

About BLI: Since 1961, BLI has been a leading test laboratory in the world of digital imaging equipment. BLI is completely independent in all of its testing processes and subsequent reporting. All of BLI's product evaluations are conducted by highly experienced employees in its on-site testing facilities in the United Kingdom and United States where hundreds of new copiers, printers, wide-format devices, scanners, and multi-function (MFP) products are evaluated and reported on each year.

CHIEF BENEFITS

ONE PLATFORM DOES IT ALL – uniFLOW can satisfy any business’s front office needs, from output and device management to scan workflows to secure printing and more, without the need to purchase, install, and administer multiple solutions.

BROAD DEVICE SUPPORT – uniFLOW is compatible with the full range of Canon hardware, from select imageCLASS printers to imageRUNNER ADVANCE MFPs. And much of uniFLOW’s key functionality is supported on Konica Minolta, Samsung, Xerox, Hewlett Packard, and OKI devices as well.

ENHANCED DOCUMENT SECURITY – The platform’s secure print functions mean that only the person authorized to release the job can see it, while uniFLOW’s optional Secure Audit Manager Express module can detect keywords in a document and alert the relevant authorities to prevent unauthorized copying or distribution of an organization’s intelligence or intellectual property.

MINIMIZE PRINT COSTS – Highly customizable print policies allow organizations to specify rules that limit users’ printing or force them to print using a specific set of options. uniFLOW’s reporting module helps managers keep track of their print spending.

MINIMIZE ENVIRONMENTAL IMPACT – uniFLOW’s pull-printing features ensure that only the documents that a person needs are printed, while its reporting system allows organizations to monitor print use and devise strategies for reducing unnecessary printing and waste. Print policies can direct users to consider printing in monochrome or duplex to cut down on paper and toner usage.

OUR TAKE

Organizations striving to get a handle on their printing will often use multiple solutions to address cost accounting, print management, mobile printing, fleet management, document capture/routing, and other needs. However, such a strategy can be cumbersome, with multiple software packages running on various servers, each requiring different administration tools and ongoing management from IT personnel. The uniFLOW platform, developed by NT-ware Systemprogrammierung GmbH and sold exclusively through Canon and approved resellers, addresses all of these needs—and much more—in a comprehensive, modular offering.

uniFLOW is an extensive and feature-rich platform that addresses a vast array of organizations’ output management needs. uniFLOW’s modularity means customers can tailor the product to suit their needs and businesses, and it means businesses don’t have to buy and maintain separate applications and servers. The platform can also help significantly reduce a customer’s hardcopy costs. Extensive reporting options (available with the Statistics module) allow businesses to identify and reduce wasteful print habits (such as printing in simplex mode rather than duplex), and its rules-based print management features can enforce more cost-effective print settings and even automatically re-route jobs to devices that are less costly to operate. Reports can identify users who have reduced printing costs or chosen low-cost options such as duplex printing.

Customizable rules-based printing allows administrators to assign print policies based on workflow. For example, they can force all printing of Outlook emails to monochrome, and extensive rules-based routing capabilities can send print jobs to more cost-effective devices on the network, further reducing print costs.

uniFLOW now has official Apple AirPrint certification which eases the integration of iOS and Mac OS devices, while the uniFLOW app allows print tracking from iOS, Android, and Windows Phone devices. All of these help workers stay productive and businesses account for mobile printing effectively.

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uniFLOW's advanced workflow tools enable processes to be automated, which both speed up tasks and minimize the chance of errors being made. We found the workflow creation wizards to be easy to use.

While IT training is encouraged to get the most out of the system, uniFLOW's ability to manage many output, scan workflow and device management functions under one umbrella can ultimately reduce complexity and expenditure for IT administrators, considering that the alternative is deploying, managing and maintaining individual applications from multiple vendors. Some print management solutions provide more support for mixed device fleets, but uniFLOW's ability to handle any front office task demanded of it—and to do it exceptionally well—makes it tough to beat for organizations looking for a top-flight output management platform.



STRENGTHS

- **Modular nature allows customers to deploy functionality as needed**
- **uniFLOW SmartClient cuts down on print-related network traffic and the number of print servers required in an organization**
- **Multi-level cost-center allocation printing for an unlimited number of clients included within the entry-level price**
- **Versatile and powerful uniFLOW Workflow Engine allows the tailoring of print and scan workflows to specific customer needs**
- **Advanced enterprise-level mobile print functionality including QR codes to identify individual printers that can be scanned by a user on their mobile device to release their job at that machine**
- **Accounting and routing features can be used with networked or locally connected devices**
- **Comprehensive mobile print features, including official Apple AirPrint certification, which eases the use of iOS devices and the use and setup of Apple Mac OS computers with the solution**



WEAKNESSES

- **Scan workflows supported only on Canon MEAP devices**
- **Complex solution, which means it requires investment of staff time to deploy and maintain**
- **Web browsers other than Internet Explorer are not fully supported**

PRODUCT PROFILE

Versions:

uniFLOW is available in a range of editions to suit every organization: Workgroup Edition, Business Edition, Corporate Edition, and Enterprise Edition. Each edition comes with the core product and a module of the customer's choice, with additional modules available at extra cost. Two further versions are available: uniFLOW Online (a cloud-based version of uniFLOW) and uniFLOW for SMB/uniFLOW Capture (a dedicated scan management and workflow package). uniFLOW Online is designed for organizations that want to take advantage of uniFLOW but don't want the cost and workload associated with managing their own servers. Although it's a software-as-a-service solution that operates via Microsoft Azure data centres, no print jobs leave the user's network, which maintains document security. uniFLOW for SMB, which has a device-based licensing structure, is intended for use by small businesses with up to 500 potential users that require secure mobile printing, accounting, and reporting, as well as access to uniFLOW's universal print driver to manage effective printing with a mixed device fleet. uniFLOW Capture is intended for use by small businesses with up to 500 users that require a scanning only solution and also have a device-based licensing structure.

Pricing:

Pricing for uniFLOW 2018 LTS is set by the reseller. For guidance, the cost of purchase varies between \$2,500 for the WorkGroup edition with 50 concurrent users to \$20,000 for the Enterprise Edition with unlimited users.

Users:

The platform supports an unlimited number of licensed users

Server:

2.5-GHz CPU (multi-core CPU recommended); 4-GB RAM; 50-GB hard disk space (80-GB or more recommended); Microsoft Windows Server 2003, Server 2008/2008R2, Server 2012/2012R2

Client:

Microsoft Windows XP Professional, Vista, Windows 7, Windows 8.x, Windows 10

Mobile Device Compatibility:

uniFLOW 2018 LTS supports mobile printing from all mobile devices via various means of submission. uniFLOW 2018 LTS supports Apple AirPrint fully and uniFLOW is certified by Apple as an AirPrint-compatible solution. The uniFLOW mobile app is available for iOS, Android, and Windows Phone devices.

Compatible Output Hardware:

Print tracking is available for all output devices, both networked and locally connected. Secure printing from a device's control panel requires MEAP-equipped Canon devices, Océ PlotWave and ColorWave devices with the Clear Connect User Interface, bEST-equipped Konica Minolta devices, EIP-equipped Xerox devices, OXP-equipped HP devices, XOA-equipped Samsung devices (varies by region), and certain OKI devices; other devices with the addition of an external uniFLOW Release Station.

Software Integrations:

uniFLOW is a self-contained solution, but it uses the Foxit and Crystal Reports applications to process PDFs and create reports, respectively. If third-party software such as the Microsoft Office suite is installed on the same server as uniFLOW, users can print files associated with that file type.

Availability:

uniFLOW is sold globally through Canon and its reseller partners in North America, Latin America, Europe, Asia-Pacific (including Japan and Korea), the Middle East and Africa.

Languages:

uniFLOW 2018 LTS supports full installation in 30 languages. The administration manual is available in English, French, Italian, German, and Spanish.

Features & Productivity

uniFLOW 2018 LTS is a modular solution that enables a diverse range of capabilities, including usage tracking and control, billing/cost recovery, device management, secure-print, and mobile-print, and that’s just a partial list. In fact, no output management solution that BLI has evaluated to date offers as much integrated functionality. Other functions can be obtained with the addition of optional modules and components.

Usage Tracking, Pricing, and Billing/Cost Recovery

- uniFLOW can track and report on all print activity within the organization regardless of the printer/MFP brand that receives the job, including jobs submitted via mobile devices and those sent to printers connected locally to networked PCs.
- uniFLOW can track any copy, scan, and fax activity that takes place at networked MFPs as long as those devices are equipped with the embedded uniFLOW applet.
- uniFLOW tracks not only the number of pages in a print job, but also the paper size, whether the job is simplex or duplex, and if it’s a color or monochrome job (uniFLOW can even track color and black-and-white pages mixed into a single document accurately).
- Information gathered by uniFLOW can be used by an organization to identify where cost savings can be made, perhaps by increasing duplex printing, cutting back on color printing, or replacing high-cost-per-page desktop printers with lower-cost-per page centralized devices, for example.
- Print tracking data provides the information for the program’s billing/cost-recovery features. These features can be used to allocate hardcopy costs to the proper cost center (an individual, department, client, or project) or report costs that should be billed to a client so the organization can recoup its outlay.
- For internal accounting, costs can be associated with users’ accounts based on their Active Directory authentication. If a job is to be billed to a client or project, users can enter the billing code associated with that client. Unlike most other accounting solutions BLI has seen, uniFLOW now offers the ability for users to create new cost centers on the fly and change the cost center for a print job at the MFP at the time of retrieval.
 - uniFLOW allows administrators to set different per-page prices for the output it tracks so that, for example, color and A3-size pages can be billed at a higher cost than monochrome and A4-size pages. The program provides very granular pricing profiles to be set for a vast array of page sizes, paper types (including tab pages), and even finishing options (such as stapling and binding)—costs that can’t be accounted for in some output management products BLI has evaluated.

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- As a further example, users who select duplex can be rewarded with lower cost printing by entering a minus value in the duplex pricing row, thereby reducing the overall cost per page charge, which could be valuable as companies seek to reduce paper costs and improve environmental credentials.
- Alternative pricing profiles (up to four) can be created. An organization can have a pricing profile that reflects the actual cost of the page to the business, for example, and one that reflects the cost billed to the client (usually a higher cost that adds in some profit, which is a typical scenario in law firms). This feature is not found in many accounting programs that BLI has evaluated.
- uniFLOW lacks just a few features that BLI has seen in competing solutions. uniFLOW does not allow users to enter non-output-related costs, such as postage, to be billed to a client or project, for example.

Secure Pull Printing

- uniFLOW’s mobile print functionality dovetails well with the platform’s secure print abilities. PC users can release jobs at the printer of their choice using their unique PIN on the machine’s keypad. Those who use the uniFLOW app can see their secure print queue on their mobile device and release jobs from there as required. Additionally, Windows Phone users whose devices support NFC (near-field communication) can authenticate at the MFP via NFC.
- Secure pull printing is crucial for improved document security and end-user convenience. It allows a user to send a print job to the uniFLOW server and release it at any device on the network. It ensures that sensitive jobs don’t sit in the output tray of a central printer and gives users the flexibility to choose an output device after the job is sent. The feature can also save money and assist with “green” initiatives, since jobs that will never be retrieved are not printed in the first place.
- Importantly, users can only see their own personal print queue and are shown all jobs in one list, regardless of whether the jobs were sent from their desktop PC, mobile device, or via email.
- Unlike some solutions that offer pull-print capabilities, uniFLOW lets the user change output settings at the device rather than adhering to the selections made in the print driver when the job was submitted.
- In addition, and unlike some other solutions, uniFLOW has mechanisms in place to protect jobs in the event of a device error. Should a device error (such as a paper jam) keep a secure-print job from finishing, uniFLOW will delete the job from the queue and notify the user that they need to re-submit it. Some other solutions will simply print the queued job once the device is back online, potentially compromising document security since the user may not be at the device at the time.

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Mobile and Cloud Printing

- Mobile printing is another premier feature of uniFLOW that comes standard with the base server license. Some leading competitors require an add-on for enterprise mobile print support.
- uniFLOW's mobile print support lets users print from outside the office or when away from their desk as easily as if they were at a PC in the office. Jobs can be sent to uniFLOW via email, either in the email body text or as an attachment, or via the uniFLOW app for iOS, Android, and Windows Mobile.
- Users can print jobs using a web browser on a mobile device or laptop. Users can also browse to an Internet Gateway page (Internet Gateway is a service provided by uniFLOW) where they can log in and then upload their print job to uniFLOW.
- Internet Gateway connects with uniFLOW inside the organization's firewall, so that no firewall settings changes are required. This also means that the uniFLOW server does not need to connect to the internet directly, which keeps the network secure.
- Internet Gateway functionality means there's no need for printer drivers to be installed locally, and users can print from laptops or mobile devices wherever they are. Regular users can have an internet-enabled printer driver installed to allow them to use "File | Print" from any application to uniFLOW.
- As of version 5.4, uniFLOW's AirPrint service has received full Apple Certification. iOS device users can print via uniFLOW using the regular iOS print menu; there's no need for a special app. Even better, uniFLOW can track printing from an iOS device via AirPrint, so administrators can be sure that their usage data is correct and that there are no printing loopholes in the system.
- uniFLOW's AirPrint certification makes life easier for Apple Mac users, too, as they can easily print via uniFLOW and enjoy all the features it provides without the need for a client application or individual drivers.
- The uniFLOW app is available on iOS, Android, and Windows Phone platforms. The app lets users send print jobs to the uniFLOW server and release print jobs securely. Jobs processed through the app can be printed directly or held until they are securely released by the user depending on how the chosen workflow is configured.
- uniFLOW supports the Google Cloud Print service, allowing customers who have purchased Google Chromebook devices, which are popular in many schools, to print securely and have their jobs accounted in the same way as jobs originating from Windows or Mac PCs. Jobs can be submitted to Google Cloud Print from any device
- For documents which are not stored on a mobile device, uniFLOW can also print directly from external cloud storage services such as Google Drive, internal web-based repositories such as Microsoft SharePoint, or any FTP site. Users can email a link to their document to uniFLOW, which then accesses the cloud storage system (using usernames and passwords where necessary) and then prints the file.

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- Users can print any file type through uniFLOW as long as the native application associated with the file type is installed on the uniFLOW server. For many environments, the main file types will be Microsoft Office documents or PDF files, so only applications relevant to those file types will need to be on the server.
- Organizations that use licensed software or where a wide variety of file types are used can purchase an additional conversion utility which enables uniFLOW to support almost 200 file types.
- When selecting a printer to release to from the uniFLOW app, users see all available printers regardless of whether they're online or not. BLI felt that the app could include an online/offline icon next to each listed printer to avoid users printing to devices that are offline.
- There is no notification to alert users that they have chosen an offline printer, so they will not know their job hasn't printed until they're at the machine. Once their desired printer has been chosen, users are shown their personal print queue and can select the required print job from the list. They're then presented with two options: "Print and delete" and "Print". "Print and delete" will delete the job from the print queue after it's been sent to a printer, so if this option is chosen and the printer is offline, they will lose their print job.
- As with all print workflows in uniFLOW, mobile print jobs are associated with users by email address or username so printing can always be accounted for under the correct budgets. uniFLOW allows a user to be associated with multiple email addresses, cloud storage logins, proximity cards, and other identification methods. Users can add or remove email addresses and other additional identities in their uniFLOW user account, which reduces the workload for administrators.
- Administrators have complete control over how jobs are printed, what can be printed, and who can print them. Administrators can restrict the domain from which email jobs are accepted, for example. They can allow jobs from "company.com" only, for example, or disallow all jobs from "hotmail.com".
- For guest users needing to print a document, uniFLOW allows administrators to configure workflows that create a temporary guest account when a job is sent from an unrecognized email address. This functionality frees up administrator time as no guest accounts need to be manually created and configured. uniFLOW will then send a release code to the guest user so they can release their job securely at their chosen device. The account can also be set to expire after a certain time or after a set budget has been used, if desired.

Cost Reduction/Output Management

- As with other output management platforms, uniFLOW allows customers to reduce costs in various ways by controlling what gets printed and by whom. The ability to set budgets and usage quotas by user or department, for example, can make users think twice before submitting a print job they might not need, which can help reduce unnecessary printing.

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- Administrators can assign an amount of credit to a user’s account and then set the system to automatically add a specific amount of credit at desired intervals. As a user approaches their limit, the system can send an email alert. If a user’s quota is exhausted, the administrator can set the system to take one of the following actions: disallow further print jobs and send an alert, allow the current job and send an alert, or continue to allow jobs and send an alert. The administrators can use the default wording for alerts or enter customized messages that get sent.
- Cost savings and environmental benefits can be achieved through the use of uniFLOW’s rules-based print policies. With such policies in force, the system can watch the print stream and alter print jobs based on the specified rules.
- Common policies supported by uniFLOW include the automatic conversion of simplex jobs to duplex (to reduce paper use), conversion of color jobs to black-and-white (to save on toner/ink and color click charges), and conversion of jobs from a particular application (such as email applications) to black-and-white.
- Unlike some output management packages, uniFLOW also offers job re-routing features. This allows administrators to create policies that automatically re-route jobs from one output device to another based on the specified rules. To give one example, uniFLOW can route a large print job to a device with a lower cost per page or faster engine speed.
- The uniFLOW server enables the automatic re-routing of a print job to another device in the assigned cluster should the original target device be offline or otherwise unavailable. This can be a time-saver for end-users because they won’t have to re-send a print job that was sent to an inoperable device.
- Thanks to uniFLOW’s OCR engine, jobs that contain a particular word or phrase in the header (“Confidential,” for example) can be routed to a particular printer. Unlike some competing platforms, jobs can re-routed from a PCL printer to a PostScript device or vice-versa.
- With the basic server package, the writing of scripts is generally required to enact rules-based print re-routing. The addition of the optional Rules & Routing module makes this process wizard-driven.
- uniFLOW’s Universal Driver, which end-users see when printing jobs, differentiates it from rivals. Unlike rival print management systems which route print jobs to the central print spooler on the secure print server using each device’s PCL/PostScript driver, uniFLOW uses a Universal Driver to route jobs to the uniFLOW central spooler.
- When an output device has been selected, either through rules-based programming or by a secure follow-me release, any print settings that were selected on uniFLOW’s Universal Driver at the time of submission are converted into the print command language defined in the specific printer’s PPD or PCL code before being forwarded to the printer. This ensures that print jobs are successfully output irrespective of the device at which they are printed.
- Some rival solutions send the same job and job ticket irrespective of the device finally selected to complete the job, which can cause conflicts with incorrect print output when different product families from a single vendor or different vendors’ products are being used.

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Device Monitoring and Management

- The uniFLOW platform provides tools to monitor and manage devices registered with the system. Administrators can see a list of printers with a color-coded icon indicating their status. Users can click a link to go directly to a device's internal web server to change settings remotely.
- The base uniFLOW server supports alerts about device status (device offline, paper jam, paper low, paper out, toner low, and so on). Administrators can see device meter and consumables data as reported in the device's public MIB (Management Information Base).

Reporting

- The optional Reports & Statistics module provides data analysis and reporting functions via a wealth of default reporting formats and a high level of customization. The report module is driven by Crystal Reports, which is long regarded as one of the best report builders available and delivers more than 65 canned reports.
- Reports can be fully customized with further conditions based on user, group, cost center, and printer criteria. Report categories are users, groups, cost centers, printers, price profiles, print/copy activity, time of day usage, budget, transactions, and cost savings.
- Reports can be displayed on screen and exported as CSV, PDF, XLS, or RTF files, allowing for further analysis in third-party applications. Within the Server Configuration utility, administrators can set up automated reports with the ability to deliver them directly to file locations, an FTP site, or email addresses.
- A unique reporting feature is the ability to review cost savings broken down by devices and users. These can be associated with a selection of black and white versus color output, duplex versus simplex, and low-cost versus high-click-charge devices. This is a valuable way for administrators to monitor who is making an effort to save money through better print workflow management and who isn't.

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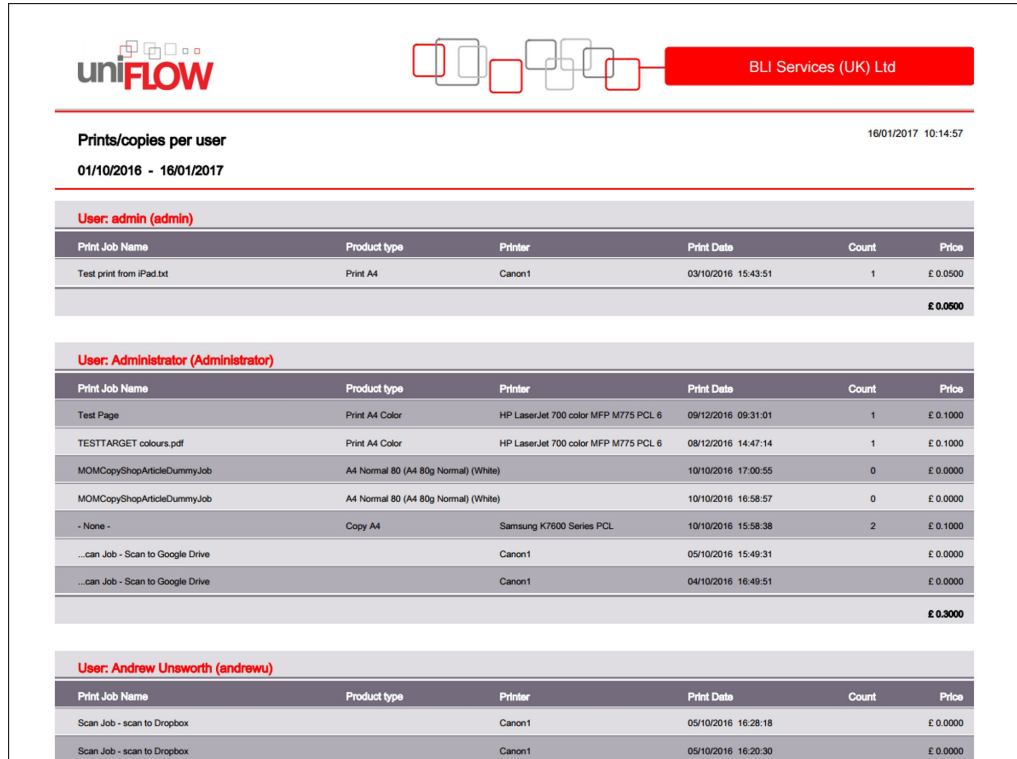
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uniFLOW BLI Services (UK) Ltd

Prints/copies per user 16/01/2017 10:14:57

01/10/2016 - 16/01/2017

User: admin (admin)

Print Job Name	Product type	Printer	Print Date	Count	Price
Test print from iPad.txt	Print A4	Canon1	03/10/2016 15:43:51	1	£ 0.0500
					£ 0.0500

User: Administrator (Administrator)

Print Job Name	Product type	Printer	Print Date	Count	Price
Test Page	Print A4 Color	HP LaserJet 700 color MFP M775 PCL 6	09/12/2016 09:31:01	1	£ 0.1000
TESTTARGET colours.pdf	Print A4 Color	HP LaserJet 700 color MFP M775 PCL 6	08/12/2016 14:47:14	1	£ 0.1000
MOMCopyShopArticleDummyJob	A4 Normal 80 (A4 80g Normal) (White)		10/10/2016 17:00:55	0	£ 0.0000
MOMCopyShopArticleDummyJob	A4 Normal 80 (A4 80g Normal) (White)		10/10/2016 16:58:57	0	£ 0.0000
- None -	Copy A4	Samsung K7600 Series PCL	10/10/2016 15:58:38	2	£ 0.1000
...can Job - Scan to Google Drive		Canon1	05/10/2016 15:49:31		£ 0.0000
...can Job - Scan to Google Drive		Canon1	04/10/2016 16:49:51		£ 0.0000
					£ 0.3000

User: Andrew Unsworth (andrewu)

Print Job Name	Product type	Printer	Print Date	Count	Price
Scan Job - scan to Dropbox		Canon1	05/10/2016 16:28:18		£ 0.0000
Scan Job - scan to Dropbox		Canon1	05/10/2016 16:20:30		£ 0.0000

The optional reporting module includes a range of customizable reports, including a rundown of usage stats for a given device.

Software Integration

- uniFLOW integrates with a wide range of user management services including Active Directory, LDAP, Novell NetWare, and others, which eases the initial setup and ongoing user management.
- uniFLOW can import and export user, group, and cost center data via XML files or the SQL connector.
- To extend its functionality into the education market, uniFLOW integrates with a payment solution called MoneyLoader that allows students to deposit money into their uniFLOW account. It supports different authentication options via a contactless card reader or an integrated keyboard.
- uniFLOW integrates with IPC PayCon, ICS, and Netcard payment systems. With the Secure Printing module enabled, users can make payments to their account over the Internet using credit cards, PayPal, RBS Worldpay, and more. This would be especially valuable for higher education environments where students and family members can replenish accounts remotely.
- As noted, users can scan directly from MEAP-enabled Canon imageRUNNER MFPs and Canon imageFORMULA ScanFront and DR-series network scanners to a number of destinations, including popular cloud storage/collaboration services, document management systems, and Enterprise Content Management platforms.

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Vertical Market Suitability

NT-ware’s workflow designer, secure printing features, and advanced security features make it suitable for a wide variety of vertical markets.

- Although uniFLOW is an off-the-shelf system, its high-end features enable businesses to implement workflows that support the specific needs of their market.
- Administrators can implement workflows that prevent the unauthorized scanning of specific documents, which protects customer data, business intelligence, and intellectual property, making it ideal for banks, law firms, and engineering firms, among others. Many workflows are already available to support specific vertical markets, and Canon/NT-ware can create new workflows if necessary.
- uniFLOW is targeted at and well-suited for the IT, legal, Human resources, and financial services vertical markets.

Usability

The way in which uniFLOW’s interface works, both at supported MFPs and at the desktop, is easy to comprehend after a brief overview.

- For end-users in an organization, uniFLOW is simple to use. When uniFLOW is set up for basic accounting, users continue to use the vendor printer drivers set up for them by IT, with tracking and accounting being conducted in the background. The user is only made aware of uniFLOW’s presence if pop-up messages are required (to enter a billing code or inform that a budget limit is approaching, for example).
- Conveniently, users only see cost centers that they are allowed to bill against, which streamlines the selection process.
- If secure printing and/or rules-based printing are in force, the user submits their print jobs via a print workflow driven by the uniFLOW Universal Driver. The driver is easy to navigate and includes multiple finishing options including duplex, stapling, hole punch, and even booklet printing.
- uniFLOW’s Universal Driver has the ability to detect settings from the application (for example, if portrait mode is set) and automatically populate that setting so the user does not have to re-select it.
- If rules-based print policies are being used in the organization, end-users are given a list of print options with a price associated with each device. This lets them choose the output device that is best for them at the time while gently encouraging them to select the device with the lowest cost per page (which is the default choice). With rules-based

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routing, users are not given the option of which device their print jobs will be sent to but are informed where it was output via a pop-up message.

- Release of secure print jobs at the MFP is also easy, with a multitude of options available depending upon the type of device selected for outputting of the job(s). On a Canon imageRUNNER ADVANCE MFP used in BLI's testing, the user enters a Job Code and is presented with a list of potential queued print jobs with four menu options: Print and Delete, Delete, Select All, and Log Out.
- All print jobs are stored in a user's personal secure queue until they're ready to release them. Users have the ability to save and archive print jobs and have ready access to the archive if they need to reprint the job. They can select them from a list and add them to a basket for re-printing.
- A handy benefit of uniFLOW's secure printing feature is the ability (at Canon MEAP-enabled devices) for the user to make changes to the print job prior to release. For example, if the job was originally submitted in simplex, the user can decide to output the job in duplex mode. The user can also be informed on the MFP's control panel of any features originally selected within the Universal Driver that are not supported by the device (stapling for example), so the user can decide whether or not to release the job.



The new uniFLOW Release Station can be used with devices that do not support the embedded app, and delivers the same look and feel as the on-device UI.

- For output devices that do not support the embedded uniFLOW applet, authentication and secure print job release is enabled using mobile device release functionality or the new uniFLOW Release Station, which is a 10-inch tablet-style interface that mimics the look and feel of the Canon MEAP applet, making it intuitive for users to release jobs at virtually any device.
- The optional microMIND box is an external box that allows for integration with NT-ware MiCard readers, including support for PIN code readers and copy-control cables.

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- Multilingual offices are aided by the ability to change the language used at a Canon MEAP-enabled device. Walk-up users simply select one from a list of firmware-supported languages. The language selected is also reflected in the uniFLOW MEAP application.
- Companies can completely customize the look and feel of the MEAP applet, changing backgrounds, colors, font sizes, logos, and so on so that they can personalize the screen to suit their own branding.

IT Admin & Security

Installation / Configuration

- As with most solutions in this class, the initial configuration of uniFLOW can be complex due to the sheer breadth of functionality and the wealth of settings for each managed area. However, the installation and setup routines have become simpler with every new version.
- Installation and setup tasks are typically performed by the authorized reseller that sold the system, although training is very much recommended for those charged with administering and supporting uniFLOW in order to get the most out of the system.
- As with most competing solutions, a uniFLOW installation requires an SQL Server database at the back end. uniFLOW can use an existing SQL Server database, but if you don't have one, the included Microsoft SQL Server 2008 R2 Express Edition can be installed during setup. A key differentiator of uniFLOW versus some print accounting solutions is that a client application does not have to be installed on the PC of every user whose printing needs to be charged to a cost center. Users simply use their Internet browser to access the uniFLOW application. Administrators can opt to install a desktop client application if this is preferred.
- Multi-site locations can benefit from the Remote Print Server module, which allows satellite locations with print servers to conduct local accounting and print control without the need for the higher level SQL and web server activities, and to forward accounting information back across the corporate network/WAN/VPN, greatly reducing the bandwidth incurred.
- Remote print servers can be clustered in all editions of uniFLOW, with the exception of the Workgroup Edition, as there is no need for print servers in installations of this size. However, an additional RPS license is required for each active clustered print server instance of uniFLOW.

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ONGOING ADMINISTRATION

- One of uniFLOW's key strengths is the breadth of applications that can be managed via one console, which makes for easier administration and support compared to learning and maintaining multiple platforms from disparate vendors.
- Day-to-day management of the server can be conducted via the web utility, which uses a "Quick Start" page with a graphical menu to list the most common configuration tasks, with options such as Activation, LDAP, User Accounts, General Settings, Price Profiles, and Printers, among others.
 - Clicking an option opens a wizard that walks the reseller or administrator through the most common settings of that particular area of configuration.
 - NT-ware claims that the vast majority of the functions needed by most customers are addressed by the wizards, which saves administrators from having to delve into the Advanced tab (which is still there for more granular customization).
 - A prime example is the wizard for adding new output devices. To get started, a user clicks the Printer entry on the Quick Start page, selects New, and then chooses whether to add a single printer, multiple printers from a template, or a printer that needs to be discovered.
 - Once this selection is made the user is presented with a list of wizards that can be used to specify the device's role in its environment, with such wizards as "Accounting only", "Accounting via total counter", "Mobile Printing – Secure Print", and "Rule Based Routing" (the list is based on the modules that are activated in uniFLOW).
 - The wizard then walks the administrator through the various settings that are needed to enable the chosen function. For example, the Mobile Printing wizard asks whether or not to allow guest access to devices on the network, if mobile print jobs should require a job code only for guests (or for all users), and other pertinent questions.
- A sidebar at the left-hand side of the screen provides users with access to various functions via menu icons. (Quick Start, Base Data, Printer, Connections, Server Configuration, and Module Configuration). Administrators will spend most of their time working with options in the Base Data menu, where they can set up users, groups, cost centers and price profiles; manage budgets; and create reports (if they have the Statistics module installed).
- The Base Data menu contains eight options: User, Groups, Cost Centers, Budget, Price Profiles, Media Type, Articles/Services, and Statistics. Clicking the User button displays a table of users and their attributes.
 - Here, Administrators can create new users, cluster users in groups, allocate cost centers to bill against, assign budgets to users, assign pricing profiles to devices, and create customized workflows. All these things can be done easily.
 - The same actions can be applied under Groups but are aided by the filter feature,

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which allows the administrator to filter users by various criteria (including number, name, logon, standard group, and standard cost center). Once information is filtered, the administrator can take advantage of the Change All feature, which allows changes to be made across all the filtered entries in a single action, streamlining management, budget updates, and changes in cost center allocations.

- o Entering cost center and group names into the filter requires manual free text entry. BLI would prefer a drop-down selection be offered to save time and reduce the chance of data entry errors.
- o Administrators can take advantage of uniFLOW's ability to integrate with LDAP, allowing new users included in Active Directory to be added to the uniFLOW database and automating a lot of the manual user/cost center management administration.
- The Cost Centers menu lets administrators create cost centers, allocate a manager, and assign budget and pricing profiles. Administrators can set up multi-tiered cost centers, which can be a great help in complex project work, cost tracking, or for billing of clients with multiple divisions or departments.
- Within the workflow composer, the administrator can set up a rule whereby large print jobs have to be authorized by the cost center manager prior to release. BLI found this Boolean rules-based programming easy to use and quick to set up. According to NT-ware, the process will be more wizard-driven in later releases, making it even more intuitive.
- The Budget screen lets administrators allocate funding at a user, group, and cost center level with auto-reload conditions, and set up different warnings and actions to occur when thresholds are approached or have been exceeded. Actions include the ability to raise a warning pop-up but allow continued operation, or prevent copying and printing until further budget is secured, among others.
- BLI would like to see a screen where all users' jobs are listed together with essential data such as owner, date created, and so on, and can be paused, deleted, or pushed to a specific printer by the administrator as needed.

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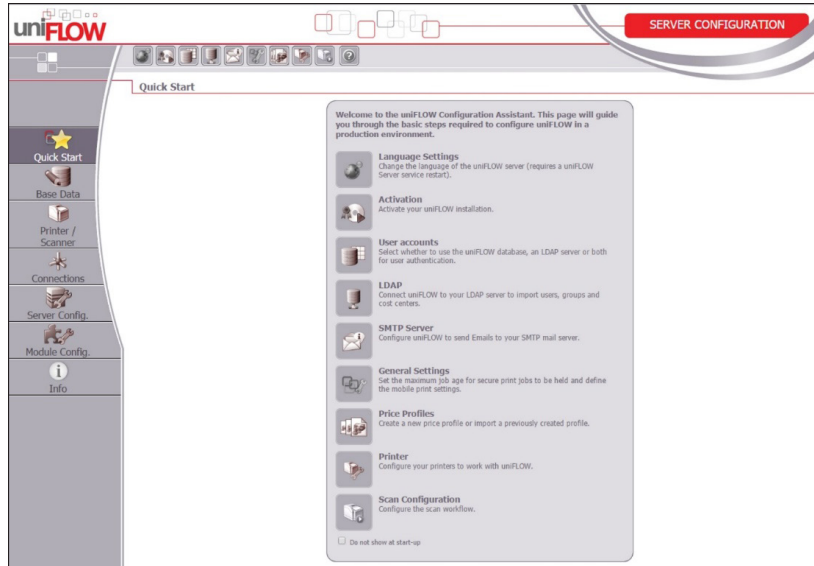
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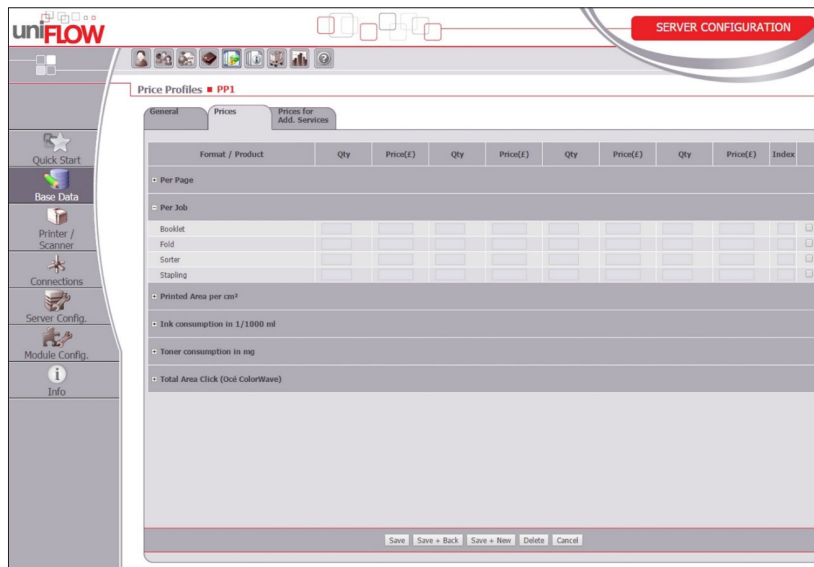
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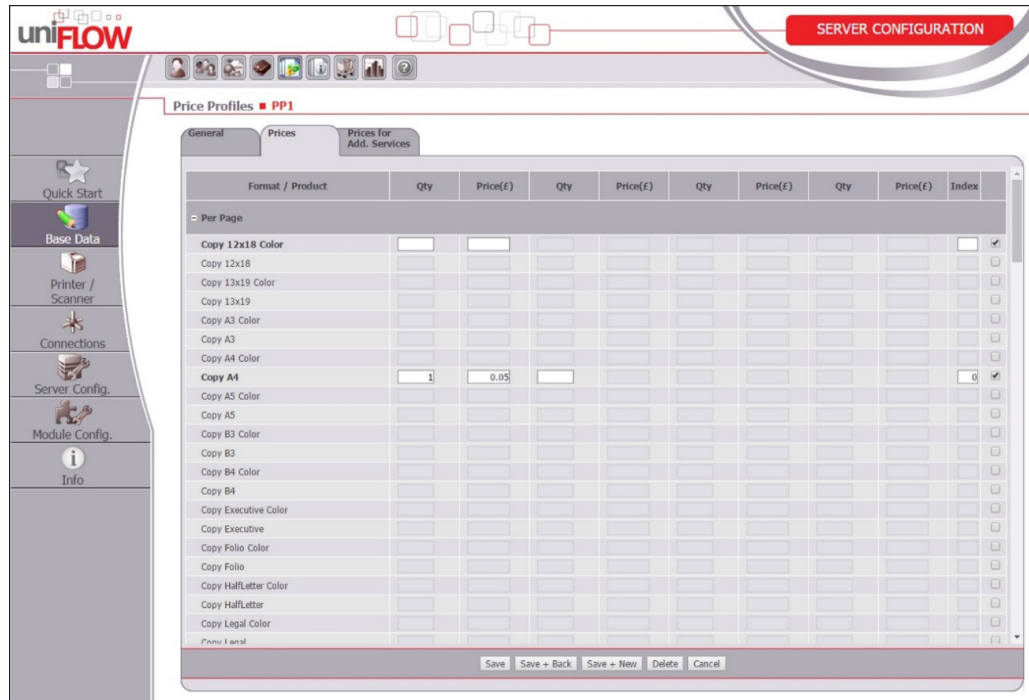
The handy Quick Start menu and underlying wizards make configuring uniFLOW much easier.



- uniFLOW gives very granular control over cost-per-page settings, allowing administrators to create custom pricing profiles.

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This screenshot shows just some of the many per-page pricing options in uniFLOW.

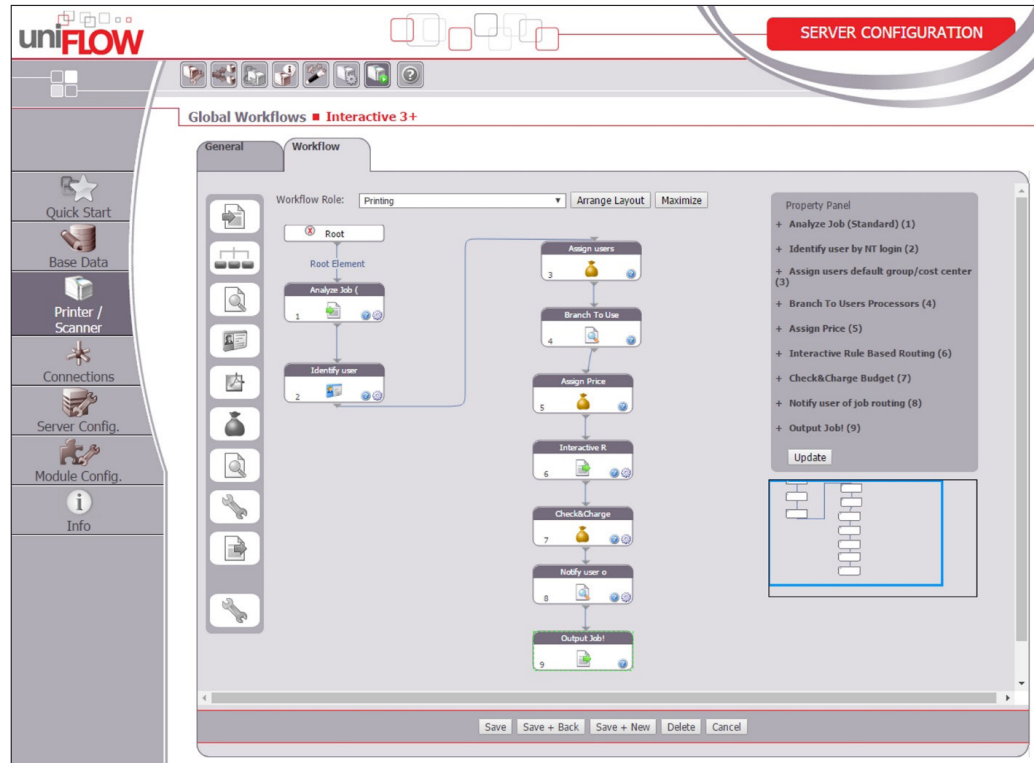
- Administrators can create pricing profiles that can be applied to users, groups, cost centers, or individual devices as required. Jobs can be priced at a very granular level, and uniFLOW provides among the most comprehensive pricing options that BLI has seen.
- Multiple price plans can be created to meet the different needs of the various parts of an organization and its users. As an example, administrators can set different prices for items, such as an A4 printed page, depending on the quantity purchased.
 - Administrators can specify four different prices depending on quantities by default, but can add up to 10 if necessary.
- Pricing options are broken down into per document, job, or page items.
 - The per-job prices are calculated cumulatively with each page printed that satisfies the pricing condition (one page in a document might be color, for example, while the rest are monochrome, and the presumably higher cost of the color page will be added to the cost of the rest of the document).
 - Per-job costs can be specified for items such as stapling and sorting.
- The printer tab lets administrators add new printers to the system, create least-cost routing workflows, secure printing workflows, and printer clusters.
- The administration software includes wizards for more than 30 different printer configurations and associated workflows. Experienced uniFLOW resellers typically have a library of common workflows they have built over time, and those can be imported

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and customized as required to meet an organization’s specific needs. Users can access a wide range of functionality to automate printing jobs.

- Workflows can be global (made public to all users) or private (only available to designated users or user groups).

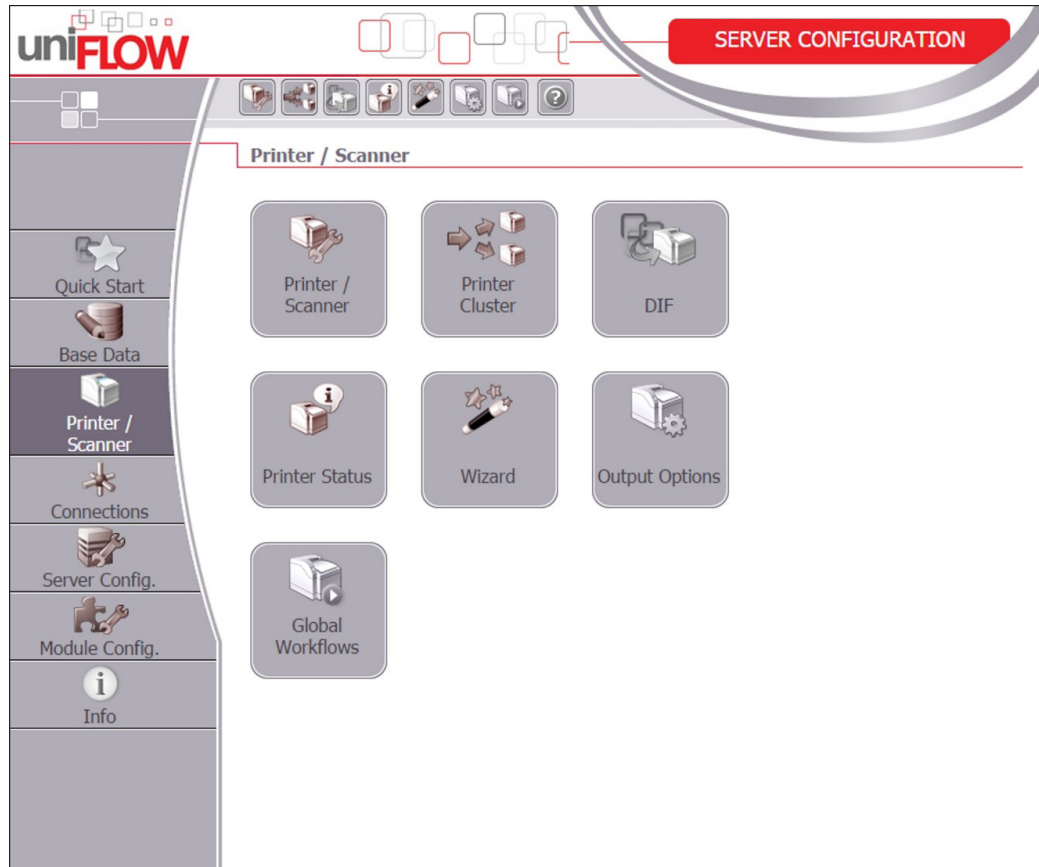


uniFLOW’s Workflow Designer allows administrators to create advanced workflows.

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- A key difference between uniFLOW and rival products is the degree of customization available. Once a workflow is established, the administrator can go back to the workflow, change the wizard to Advanced Printer Configuration and then gain access to the Workflow Editor. The scope of the options available is determined by the modules installed.
 - Canon recommends that the majority of workflow configuration should ideally be completed by Canon or the reseller at installation, as creating workflows can be complex.
 - The wizard allows administrators to add, remove, and edit individual steps in the workflow process.
 - BLI technicians were impressed by the flexibility offered but feel that users would benefit from a higher level of guidance in order to be able to customize workflows more easily.



Under the Printer tab in the admin console, administrators can add printers, deploy workflows, view device statuses, and more.

- The creation of new printers is best conducted via the wizard, which walks the administrator through the process. The number of options is determined by the modules installed. Wizards range from the basic accounting-only printer installation through to complex interactive rules-based routing printer workflows.
- Administrators can select, edit, and create new device information files (DIFs) to associate with printers on the system. DIFs associate print command instructions in the device PPD native file with the printer output options found within the uniFLOW Universal Driver.
 - uniFLOW is more reliable and errors are less likely to occur for mixed fleets with DIF files installed on devices, as the uniFLOW Universal Print Driver can then be utilized.
 - Rival solutions rely on individual OEM drivers, which means that jobs are submitted to the central server from the native printer driver, and this can result in errors when the destination printer does not utilize the same print instruction coding as the driver.
 - More than 2,700 DIFs are available. DIFs for all Canon devices (with a few exceptions) and all HP single-function printers are included as standard and are

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locked (that is, they cannot be changed). New DIFs can be created for devices not supported out of the box via the DIF Creator utility, and NT-ware provides a web portal (www.nt-ware.net/difportal) where new DIFs are posted in between Service Releases of uniFLOW for new Canon and third-party manufacturer devices.

- o Under Output Options, the administrator can view the list of all devices, and by clicking on the entry can make changes to the DIF settings and specify media in each of the output locations.
- uniFLOW comes with a comprehensive user manual (it's a whopping 2,184 pages long) that's available in English, French, Italian, German, and Spanish.
 - o Administrators can choose to view the user manual within the program or download the document to the desktop. The manual is well laid out with a comprehensive index.
 - o BLI technicians found the instructions well written, with helpful screenshots to guide users through setup tasks. The manual has a table of contents at the front which is fully hyperlinked to the relevant area of the manual, and hyperlinks in the main body of the manual refer the user to other areas of the manual that cross-reference an issue.
 - o There is an online facility that can be accessed from the solution by selecting the Help button on the top menu bar. This content is dynamic and the user is taken to the help section that's relevant to the area of the uniFLOW they're in at the time.
 - o The manual has little troubleshooting information, and BLI would also like access to an online knowledge base to help resolve issues and learn more about the solution.

Security

uniFLOW 2018 LTS provides a high level of security, with users having to provide authentication for copying, printing, scanning, and faxing, thus allowing administrators to trace every job back to its owner and providing an audit trail for compliance purposes.

The solution can also restrict users' access to functions via Access Control Lists (ACL). Administrators can create these with a list of users and groups who are allowed to use the functions and a list of those who are denied access. These lists can be associated with specific functions within the access control menu such as color printing, scanning, and so on. The ACL can be applied across the entire fleet of devices or applied on a device-by-device basis. A wide range of authentication methods are supported, including PC login, PIN or user login entered at the device or via multiple card reader options such as magnetic strip, and Smart/RFID proximity cards (including Legic, Mifare, HID and Hi-tag).

uniFLOW includes a number of other security features, including optional direct integration with Canon imageWARE Secure Audit Manager (SAM), which provides a complete audit

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history of all device activity linked to the user, so that any security breaches can be traced back to the guilty party. While this provides a useful means of investigation after a breach, the greater advantage that uniFLOW offers is due to the embedded I.R.I.S OCR software and sophisticated rules management capabilities. With these, organizations can police and control access to company-critical information. For example, BLI was able to create an audit workflow that looked at the content of all scan jobs and filtered documents based on whether or not they contained specific words. Using this resource, security officers can lock down scan, copy (through scan and print workflow usage), and print access to any document containing sensitive information. The workflow can be set up so security officers are immediately sent an email when someone is attempting to copy, print, or scan a sensitive restricted-access document, informing them that the breach has been attempted and indicating who the responsible person is.

Naturally, the secure release functionality for print jobs provides additional security by preventing confidential documents from sitting on a printer until they are collected, as the sender needs to provide authentication to release a job from the uniFLOW print queue. uniFLOW’s secure printing workflows are robust. Most notably, in the event of a device error (such as a paper jam or no paper in the tray), uniFLOW will delete the job from the queue and notify the user. With some other systems, a spooled job will be printed once the device error is cleared—and the intended recipient may no longer be there to retrieve it. In addition, security and network traffic can be improved with the built-in encryption and compression of print jobs in transit.

Support & Training

Canon and NT-ware provide customer support for uniFLOW via a number of means, including telephone and email, while onsite training is available through Canon via a professional services agreement.

- Phone, onsite, and web-based technical support for end-users is dependent upon the individual Canon operating company. For example, in the U.S, phone support is provided on business days between 9 am and 5 pm Eastern time, and email support is also available.
 - o However, NT-ware provides third- and fourth-level support to supplement that provided by Canon across three areas (Europe, U.S., and Singapore) for round-the-clock response, so there is always someone available to help.
- Unfortunately, NT-ware does not provide end-users with access to its online knowledgebase; it is reserved for resellers that have a valid login. Some rival vendors provide their users with such a knowledge base, as it is a handy means of resolving issues and supporting self-learning.

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- Customer technical support and training is provided by Canon and its channel partners through a professional services agreement.

Value

Overall, uniFLOW is excellent value. It provides much more than just print management features, and it can be extended to include other output management and document security areas that competing platforms cannot address at any cost. The modular makeup of uniFLOW and the availability of a version tailored to the SMB market mean that a basic deployment can be installed at a relatively low cost per user into a small business or department within a larger organization, with customers able to upgrade to larger license packages or add more modules as required.

- uniFLOW is available in a range of editions, each including a different number of concurrent licenses (all prices are MSRP for the U.S.; pricing in other regions may vary):
 - Workgroup Edition costs \$2,546 and includes 50 concurrent user licenses, with each additional module costing \$1,409
 - Business Edition costs \$5,456 and allows 250 concurrent users, with each additional module costing \$1,746
 - Corporate Edition costs \$9,819 and allows 500 concurrent users, with each additional module costing \$3,495
 - Enterprise Edition costs \$19,092 and allows an unlimited amount of users to use the system, with each additional module costing an extra \$5,579.
- In addition to the user licenses, these packages include the core server software, one year’s support for an unlimited number of devices, and one module of the customer’s choosing. Additional modules are charged at varying rates depending on the license edition chosen.
- There’s also a uniFLOW for SMB bundle that allows small businesses to implement uniFLOW at a very low cost: just \$470 per Canon MEAP device. The uniFLOW for SMB bundle includes the Reporting & Statistics and Secure Print modules, and other features found in the base server such as support for mobile printing. However, note that customers cannot add MFP components for non-Canon devices with the SMB bundle.
- While the modular nature can be a plus for customers, note that with uniFLOW some typical print management functionality must be purchased as add-ons. With the exception of the SMB bundle, the Reporting & Statistics module must be selected as one of the customer’s included modules or purchased separately, for example; most

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other platforms include reporting in the base server. However, organizations have to pay extra for mobile print support with some other leading output management solutions, while uniFLOW provides this functionality natively, at no extra cost.

- uniFLOW is priced on a floating-license model rather than on a per-seat basis as found in most rival systems. This model is very similar to a concurrent user license except that each account is locked for 15 minutes after a user logs off. The floating-user license model means a company with more employees than the total number of licences could still use the system effectively, especially in environments where some per-seat licenses would otherwise be under-utilized.

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