



Impressions Counting in HP Web Jetadmin

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Overview

HP Web Jetadmin offers various types of page counter columns to meet the needs of customers. Impressions, sheets, and job type counters all provide value in distinctive areas of interest. More users are printing in duplex mode as a consequence of Go Green/ecological sustainability. Sheet counting methods are designed to enable efficient service and support by counting sheets as they pass through the print engine. For duplex printing, sheet counting focuses more on paper and duplexer usage rather than accuracy of toner usage. HP developed an impression-based counting methodology in order to more accurately bill for toner usage. Impression counting is standard on newer FutureSmart devices, but can also be enabled on older devices to implement new page counting methods that are more aligned with today's job accounting needs.

Counting impressions vs. counting sheets

HP printers have traditionally counted pages printed as sheets. Sheet counting can monitor paper consumption and the physical wear and tear on the print engine components because every sheet that passes through the print engine is counted. As one sheet (or one piece of media) passes through the engine print cycle in simplex mode, it is counted as one simplex sheet. A simplex page is counted as either one mono sheet or one color sheet depending on whether color toner was present on the sheet. As one sheet passes through the engine print cycle in duplex mode, it is counted as one duplex sheet. However, the most costly side of the usage is counted for a duplex page, which means that if color exists on only one side of the duplex page, the printer meters two color pages. Blank sides of a duplex page are counted as printed pages and are metered as the usage on the printed side. Duplex 1 Image page counts are incremented for the blank side of the last page of a duplex print job, but are not tracked as color or mono.

HP developed firmware that implements an impression page counting method that is more aligned with today's job accounting needs. An impression is defined as a side of a page that contains toner. Only the printed image is counted regardless of the number of sheets the print engine processes. Impression counts eliminate the concept of duplex pages and separate the pairing of color counts and duplex counts. Each side of a page is counted as an impression based on whether toner is on the page. An impression is color if color toner is used, otherwise the impression is mono. Both color and mono are used for billing, but color is billed at a higher rate (because of the higher cost) than mono. Under the new impression counting technique, toner usage is more accurately metered.

Enabling impressions

Newer HP FutureSmart models have values defined for both impressions and sheets, and these values are defined for many different media sizes. These devices are set to impressions counts by default and also provide the sheet counts needed to measure simplex and duplex values. No firmware upgrades or settings changes are needed on FutureSmart and many other newer HP device models to obtain impressions counting. This counting methodology is implemented as a base feature on these devices.

WARNING: If the new impression-based counting method is enabled, the device cannot return to the previous sheet-counting counting method.

If the feature is not enabled, nothing on the device changes and it continues to count pages as it did when shipped from the factory (see the following behavior tables). Device administrators and product owners should review the information in this document to make an informed decision about whether they want to

permanently enable the new counting behavior or stay with the original factory counting behavior. The following tables reflect the device models and firmware that are required for impression counting.

Single-function Mono

Model	F/W Date	F/W Version
HP LaserJet P3005	20100222	02.090.7
HP LaserJet P3015	20100120	07.040.7
HP LaserJet P4014	20100212	04.070.7
HP LaserJet P4015	20100212	04.070.7
HP LaserJet P4515	20100212	04.070.7
HP LaserJet 4250	20091230	08.160.4
HP LaserJet 4350	20091230	08.160.4
HP LaserJet 5200	20091230	08.100.4
HP LaserJet 9040	20100213	08.140.5
HP LaserJet 9050	20100213	08.140.5

Single-function Color

Model	F/W Date	F/W Version
HP Color LaserJet CP3505	20100220	03.070.7
HP Color LaserJet CP3525	20100106	06.050.5
HP Color LaserJet CP4005	20100211	46.130.5
HP Color LaserJet CP5520	20100120	07.020.7
HP Color LaserJet 4700	20100209	46.130.5
HP Color LaserJet 5550	20100126	07.140.5
HP Color LaserJet CP6015	20100121	04.060.6

Multifunction (MFP) Mono

Model	F/W Date	F/W Version
HP LaserJet M3027/35 MFP	20100306	48.121.4
HP LaserJet 4345 MFP	20100220	09.170.8
HP LaserJet M4345 MFP	20100306	48.121.4
HP LaserJet M5025/35 MFP	20100306	48.121.4
HP LaserJet 9040 MFP	20100219	08.160.8
HP LaserJet 9050 MFP	20100219	08.160.8
HP LaserJet M9040 MFP	20100306	51.071.4
HP LaserJet M9050MFP	20100306	51.071.4

Multifunction (MFP) Color

Model	F/W Date	F/W Version
HP CM8050 MFP with Edgeline	20091130	77.018.0
HP CM8060 MFP with Edgeline	20091130	77.018.0
HP Color LaserJet CM3530 MFP	20100306	53.051.4
HP Color LaserJet 4730 MFP	20100219	46.250.9
HP Color LaserJet CM4730 MFP	20100306	50.101.4
HP Color LaserJet CM6030 MFP	20100306	52.071.4
HP Color LaserJet CM6040 MFP	20100306	52.071.4
HP Color LaserJet 9500 MFP	20100219	08.160.8

NOTE: You can use the HP Web Jetadmin **Firmware Upgrade** functionality to update any of these device models. You can download the latest firmware images directly from www.hp.com to the HP Web Jetadmin Firmware repository.

To enable impression counting on older devices using HP Web Jetadmin, use the configuration option shown in Figure 1.

WARNING: By enabling the **Duplex Impression** feature on these models, you will effectively remove the simplex and duplex counters. After the configuration is complete, you will not be able to set a device that has **Duplex Impressions** enabled back to non-**Duplex Impressions**.

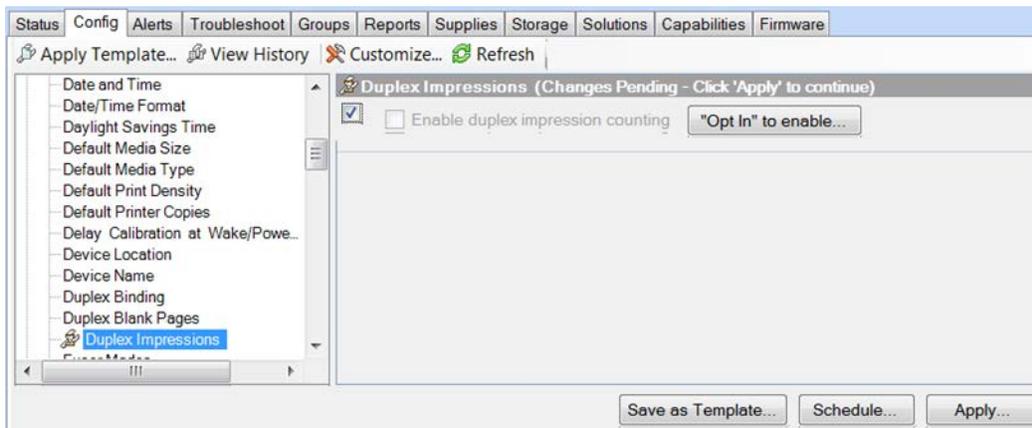


Figure 1: Duplex Impressions configuration option

Locate the **Duplex Impressions** configuration option on the **Config** tab in any device list that contains the appropriate models with the minimum firmware listed in the previous tables. Enable the configuration item by selecting the checkbox located in the upper-left corner. When attempting to enable impression counting on a device, HP Web Jetadmin presents an “OPT In” message that states the device will change how it counts pages and will be viewable from all customer-viewable perspectives, including the EWS Usage page, Printed Usage page, and HP Web Jetadmin.

The following tables compare how the device and HP Web Jetadmin treat the counters before and after the Duplex Impressions feature is enabled.

Old Behavior

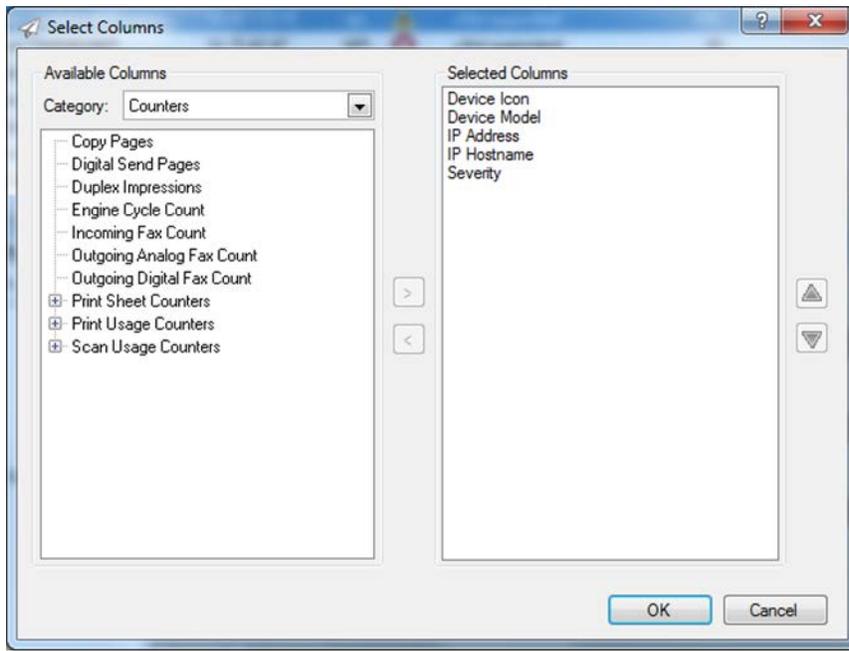
Content	Metered As
Blank + Blank	2 x Mono
Blank + Mono	2 x Mono
Blank + Color	2 x Color
Mono + Color	2 x Color
Color + Color	2 x Color

New Behavior

Content	Metered As
Blank + Blank	0 x Mono
Blank + Mono	1 x Mono
Blank + Color	1 x Color
Mono + Color	1x Mono, 1 x Color
Color + Color	2 x Color

Displaying counters in columns

In the HP Web Jetadmin device list columns, a variety of counters can be displayed, both impressions and sheets based, in the **Counters** category.



Engine Cycle Count Option 1

The first noticeable counter, and likely the most widely supported counter on all printer models, including third-party printers, is **Engine Cycle Count**. This counter is provided by a simple Standard Printer MIB query of `prtMarkerLifeCount`. It is the equivalent to an odometer count, completely oblivious to color/mono, simplex/duplex, or page size. It always matches the **Engine Cycle Count** displayed under a printer's **Configuration Page**.

Notice that the **Configuration Page** indicates that both **Engine Cycles**, and its counterpart **Color Engine Cycles**, are not weighted for billing. These two counters do not take advantage of the accurate billing algorithm used for impressions. While not valuable for billing purposes, **Engine Cycles** still adds value by indicating how much more the engine is working compared to the actual impressions. **Engine Cycles** can be used for field troubleshooting and to also understand the overall cycles a device has used during its life. It is a value that is used to troubleshoot behaviors related to rotations, jams, and overall hardware use.

Device Status
Job Log
Configuration Page
Supplies Status Page
Event Log Page
Usage Page
Device Information
Control Panel Snapshot
Print
Printable Reports and Pages

Other Links
HP Instant Support
Shop for Supplies
Product Support

Configuration Page

Device Information

Product Name:	HP Color LaserJet CM4540 MFP
Device Name:	HP Color LaserJet CM4540 MFP
Model Number:	CC421V
DC Controller Version:	4.125
Output Accessory Bridge Version:	4.104
Device Serial Number:	JP2CB960JC
Formatter Number:	RJ100C3
CPB:	1.112
SCB:	CARAMB 4.5
Firmware Bundle Version:	3.2
Firmware Revision:	2302243_421960
Firmware Datecode:	20131122
HP FutureSmart Level:	HP FutureSmart 2
Service ID:	20265
Fuser Kit Interval:	150000
Pages Since Last Fuser Maintenance:	89900
Transfer Kit Interval:	150000
Pages Since Last Transfer Maintenance:	3200
Document Feeder Kit Interval:	90000
Pages Since Last Doc Feeder Maintenance:	2
PS Wait Time-out:	300 seconds
Engine Cycles*:	121125
Color Engine Cycles*:	109096

*Not weighted for billing

NOTE: The **Color Engine Cycles** count is still available in HP Web Jetadmin, although it has been moved to the **Obsolete** category. It is called **Total Count Color**, but it always matches the **Color Engine Cycles** count on the device **Configuration Page**. The recommended column for total color is **Total Color Impressions** under the **Printer Usage** category. This **Total Count Color** counter is still made available primarily for legacy devices. It claims **Not Supported** for FutureSmart devices at this time.

Print Sheet Counters

The **Print Sheet Counters** category contains media sizes and various totals, such as **Total Sheets**, **Total Simplex Sheets**, and **Total Duplex Sheets**. These counters are most useful in cases where billing accuracy is not important. These counters are used when it is desirable to see if duplex printing is being used as recommended. Totals for simplex and duplex can be displayed per size or as a total of all sizes printed.

Select Columns

Available Columns

Category: Counters

- [-] Tabloid Extra
 - Total Duplex Sheets
 - Total Sheets
 - Total Simplex Sheets
- [-] Unknown Media Size
- [-] US EDP
- [-] US Envelope A2
- [-] US Executive
- [-] US Executive R
- [-] US Government Legal
- [-] US Government Letter
- [-] US Legal
- [-] US Letter
- [-] US Letter R
- [-] US Letter W
- [-] US Letter WR
- [-] Print Usage Counters
- [-] Scan Usage Counters

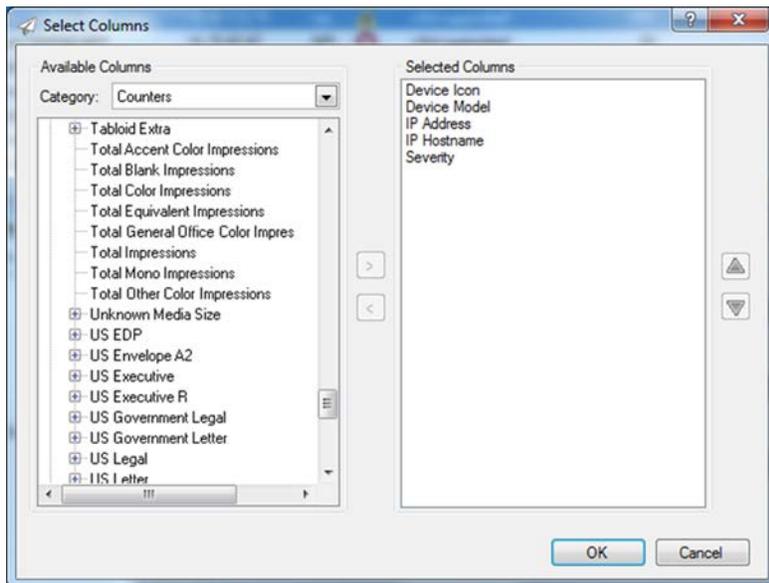
Selected Columns

- Device Icon
- Device Model
- IP Address
- IP Hostname
- Severity

OK Cancel

Print Usage Counters

The **Print Usage Counters** category displays counts as impressions in order to provide billing accuracy for color vs. mono. Totals for color and mono can be displayed per size or as a total of all sizes printed. **Total Blank Impressions** or any of the **Blank Impressions** under a specific media size are simply one side of a sheet that has not received a printed impression. Older devices refer to blank pages at the end of a duplex job as **Duplex 1 Images**.



Total Equivalent Impressions takes into account the size of the media and multiplies this “media size” by the number of impressions to calculate the total. Letter size is the equivalent of a media size value of 1. Larger media have a media size larger than 1, and smaller media have a media size smaller than 1.

For devices that do not support impressions, HP Web Jetadmin can use **Blank Impressions** to correlate values between sheets and impressions. However, the value correlation is only as accurate as the values HP Web Jetadmin acquires from the device itself. In many cases specific to the device model, the following formula is true:

$$\text{Total Duplex Sheets} * 2 + \text{Total Simplex Sheets} - \text{Total Blank Impressions} = \text{Total Impressions}$$

This is generally a good rule of thumb when testing HP devices and HP Web Jetadmin counters.

NOTE: Device counts can vary depending on the firmware and implementation.

Column calculations

The values displayed in the various page counter columns in HP Web Jetadmin are either pulled directly from the device or are the result of a calculation based on values pulled directly from the device. It helps to compare the values seen on a device **Usage Page** to those displayed in HP Web Jetadmin to understand how the values are calculated.

The following screen shots depict the **Configuration** and **Usage Pages** for sample devices. The values on these screen shots are used in the following spreadsheet to explain how the HP Web Jetadmin counter columns are

calculated. The spreadsheet includes columns to explain calculations for three different types of devices: FutureSmart, Oz and LEDM. Examples of FutureSmart and LEDM devices are as such:

FutureSmart	LEDM
HP Color LaserJet CM 4540 MFP	HP LaserJet CM1415
HP Color LaserJet CP5520	HP LaserJet CP1525
HP Color LaserJet Enterprise M750	HP LaserJet M1536
HP Color LaserJet Enterprise M855	HP LaserJet 200 color M251
HP Color LaserJet Enterprise flow MFP M880	HP LaserJet 200 color M276
HP LaserJet 500 MFP M525	HP LaserJet Pro 300 color M351
HP LaserJet Enterprise 500 MFP MXP M525	HP LaserJet Pro 300 color MFP M375
HP LaserJet 500 color M551	HP LaserJet Pro 400 Printer M401
HP LaserJet 500 color MFP M575	HP LaserJet 400 M401dne
HP LaserJet Enterprise 500 Color MXP M575	HP LaserJet Pro 400 MFP M425
HP LaserJet 600 M601	HP LaserJet Pro MFP M435
HP LaserJet 600 M602	HP LaserJet Pro 400 color M451
HP LaserJet 600 M603	HP LaserJet Pro 400 color MFP M475
HP LaserJet 700 MFP M725	HP LaserJet Pro MFP M521
HP LaserJet 800 M806	HP LaserJet 500 color MFP M570
HP LaserJet flow MFP M830	HP Laserjet 700 M712
HP LaserJet M4555 MFP	HP LaserJet 700 color MFP M775

HP Color LaserJet CM6040MFP (Oz) Usage Page

Usage Page												
Device Information												
Device Serial Number:		XXXXXXXXXX										
Product Name:		HP Color LaserJet CM6040 MFP										
Usage Totals (equivalent)												
Printer	Simplex			Duplex			TOTAL			Duplex 1 Image		
	Page Size	Mono	Color	Units	Mono	Color	Units	Mono	Color	Total	Mono	Color
		**	**	**	**	**	**	0.0	0.0	0.0	**	**
Letter	2,730	2,626	1.0	278	1,273	2.0	3,286.0	5,172.0	8,458.0	9	37	
Legal	3	2	1.3	8	12	2.6	24.7	33.8	58.5	0	1	
A4	0	0	1.0	0	0	2.0	0.0	0.0	0.0	0	0	
Executive	0	0	0.6	0	0	1.6	0.0	0.0	0.0	0	0	
11x17	4	95	2.0	1	354	4.0	12.0	1,606.0	1,618.0	1	4	
A3	0	0	2.0	0	0	4.0	0.0	0.0	0.0	0	0	
Envelope #10	0	0	0.4	**	**	**	0.0	0.0	0.0	**	**	
Envelope Monarch	0	0	0.3	**	**	**	0.0	0.0	0.0	**	**	
Envelope C5	0	0	0.6	**	**	**	0.0	0.0	0.0	**	**	
Envelope DL	0	0	0.4	**	**	**	0.0	0.0	0.0	**	**	
B4(JIS)	0	0	1.5	0	0	3.0	0.0	0.0	0.0	0	0	
B5(JIS)	0	0	0.7	0	0	1.4	0.0	0.0	0.0	0	0	
Envelope B5	0	0	0.7	**	**	**	0.0	0.0	0.0	**	**	
Custom	0	0	1.0	0	0	2.0	0.0	0.0	0.0	0	0	
Postcard(JIS)	0	0	0.5	**	**	**	0.0	0.0	0.0	**	**	
DPostcard(JIS)	0	0	0.5	**	**	**	0.0	0.0	0.0	**	**	
A5	0	0	0.5	**	**	**	0.0	0.0	0.0	**	**	
Letter Rotated	0	0	1.0	0	0	2.0	0.0	0.0	0.0	0	0	
A4 Rotated	0	0	1.0	0	0	2.0	0.0	0.0	0.0	0	0	
A6	0	0	1.0	**	**	**	0.0	0.0	0.0	**	**	
B6(JIS)	0	0	0.4	**	**	**	0.0	0.0	0.0	**	**	
8.5x13	0	0	1.1	0	0	2.2	0.0	0.0	0.0	0	0	
Statement	0	0	0.5	**	**	**	0.0	0.0	0.0	**	**	
12x18	0	0	2.3	0	0	4.6	0.0	0.0	0.0	0	0	
RA3	0	0	2.1	0	0	4.2	0.0	0.0	0.0	0	0	
SRA3	0	0	2.3	0	0	4.6	0.0	0.0	0.0	0	0	
4x6	0	0	0.3	**	**	**	0.0	0.0	0.0	**	**	
5x8	0	0	0.4	**	**	**	0.0	0.0	0.0	**	**	
8K270x390	0	0	1.7	0	0	3.4	0.0	0.0	0.0	0	0	
16K195x270	0	0	0.6	0	0	1.6	0.0	0.0	0.0	0	0	
Envelope #9	0	0	0.4	**	**	**	0.0	0.0	0.0	**	**	
Envelope C6	0	0	0.3	**	**	**	0.0	0.0	0.0	**	**	
Total Printer Usage							3,322.7	6,811.8	10,134.5			

HP Color LaserJet CM6040MFP (Oz) Configuration Page

Configuration Page

Device Information

Product Name: HP Color LaserJet CM6040 MFP
Device Name: HP Color LaserJet CM6040 MFP
Model Number: CXXXXA
Device Serial Number: XXXXXXXXXX
Formatter Number: RC700YE
CPB: 5.018 (0.0)
SCB: KAU003 4.9
Bootloader: LDR 03.69
Firmware Datecode: 20110215 52.132.6
DC Controller Version: 10.511 (62)
DC Controller (Secondary) Version: 07.052
Optional Trays Version: 01.013
Duplex Unit Version: 01.013
Output Accessory Bridge Version: 01.102
Service ID: 00000
PS Wait Time-out: 300 seconds
Engine Cycles: 9390
Color Cycle Count: 5922
Document Feeder Kit Interval: 60000
Pages Since Last Doc Feeder Maintenance: 680

HP LaserJet 500 color MFP M575 (FutureSmart) Usage Page

Usage Page

Device Information

Device Serial Number: MX2CD490BJ
Product Name: HP LaserJet 500 color MFP M575
Device Name: HP LaserJet 500 color MFP M575

Impressions

Print				
Paper Size	Units	Monochrome	Color	Total
Letter (8.5x11)	1.0	248	565	813
Legal (8.5x14)	1.3	0	26	26
A4 (210x297 mm)	1.0	2	0	2

Copy				
Paper Size	Units	Monochrome	Color	Total
Letter (8.5x11)	1.0	45	589	634

Equivalent Impressions (Letter/A4)

	Monochrome	Color	Total
Print	250.0	598.8	848.8
Copy	45.0	589.0	634.0
Fax	0.0	0.0	0.0

HP LaserJet 500 color MFP M575 (FutureSmart) Configuration Page

HP LaserJet 400 color MFP M475 (LED) Usage Page

Configuration Page

Device Information	
Product Name:	HP LaserJet 500 color MFP M575
Device Name:	HP LaserJet 500 color MFP M575
Model Number:	CM4540
DC Controller Version:	4.72
Device Serial Number:	MX2CD490BJ
Formatter Number:	T5001E4
CPB:	2.141m
SCB:	xxxxFA1407BR 1.0
Firmware Bundle Version:	3.2.3
Firmware Revision:	2302742_432822
Firmware Datecode:	20140302
HP FutureSmart Level:	HP FutureSmart 3
NFC revision:	Not Installed
Service ID:	22117
Fuser Kit Interval:	150000
Pages Since Last Fuser Maintenance:	2300
Document Feeder Kit Interval:	100000
Pages Since Last Doc Feeder Maintenance:	117
PS Wait Time-out:	300 seconds
Engine Cycles*:	1561
Color Engine Cycles*:	1194

*Not weighted for billing

Impressions

Total Impressions:	251
Monochrome Impressions:	113
Color Impressions:	138
Total Equivalent Impressions (A4/Letter):	251.0
Monochrome Equivalent Impressions (A4/Letter):	113.0
Color Equivalent Impressions (A4/Letter):	138.0
Duplex Sheets:	4
Jam Events:	1
Mispick Events:	0
Photo Color Impressions:	0
Photo Monochrome Impressions:	0
USB Flash Drive Insertions:	0
Images Scanned to USB Flash Drive:	0
Copy Flatbed Images Scanned:	4
Copy ADF Images Scanned:	136
Copy Monochrome Impressions:	2
Copy Color Impressions:	97
ADF Images Scanned to Host:	0
Flatbed Images Scanned to Host:	0
Images Scanned to E-mail:	0
Images Scanned to Network Folder:	0
Fax ADF Images Scanned:	1
Fax Flatbed Images Scanned:	2
Fax Impressions:	3
Images Sent from PC:	0
ADF Images Scanned:	102
Flatbed Images Scanned:	6
Scanner Jam Events:	32

Device Model	Sev	Total Count Color	Engine Cycle Count	Total Color Impressions	Total Mono Impressions	Total Blank Impression	Total Impressions	Total Equivalent I	Duplex Impression	Total Simplex Sheets	Total Duplex Sheets	Total Sheets
HP Color LaserJet CM3530 MFP	✓	45	62	45	17	0	62	62.00	Disabled	62	0	62
HP Color LaserJet CM3530 MFP	✓	0	29	0	29	0	29	29.00	Disabled	29	0	29
HP Color LaserJet CM3530 MFP	⚠	475	858	476	371	0	847	847.00	Enabled	<Not supported>	<Not supported>	<Not supported>
HP Color LaserJet CM3530 MFP	⚠	326	466	334	138	0	472	472.00	Enabled	<Not supported>	<Not supported>	<Not supported>
HP Color LaserJet CM4730 MFP	⚠	502	791	512	264	14	776	778.10	Disabled	500	145	645
HP Color LaserJet CM6040 MFP	⚠	0	10	0	10	0	10	10.00	Disabled	10	0	10
HP Color LaserJet CM6040 MFP	⚠	5,922	9,390	5,969	3,301	52	9,260	10,077.20	Disabled	5,460	1,926	7,386
HP Color LaserJet CM4540 MFP	⚠	<Not supported>	3,973	2,756	973	222	3,729	3,735.80	Disabled	2,583	684	3,267
HP Color LaserJet CM4540 MFP	⚠	<Not supported>	897	658	197	42	855	856.20	Disabled	426	236	661
HP Color LaserJet CP3525	✓	4,102	4,789	4,203	484	112	4,687	4,748.50	Disabled	1,923	1,438	3,361
HP Color LaserJet CP3525	✓	10,084	10,997	10,076	913	10	10,989	10,989.00	Disabled	10,651	174	10,825
HP Color LaserJet CP6015	⚠	940	1,270	959	312	0	1,271	1,528.60	Enabled	<Not supported>	<Not supported>	<Not supported>
HP Color LaserJet CP9520 Series	⚠	<Not supported>	7,969	6,983	846	138	7,829	8,135.80	Disabled	2,449	2,759	5,208
HP Color LaserJet CP9520 Series	⚠	<Not supported>	24	8	16	0	24	24.00	Disabled	24	0	24
HP Color LaserJet CP4520 Series	✓	7,158	8,896	7,422	1,026	444	8,448	8,449.50	Disabled	1,666	3,613	5,279
HP Color LaserJet CP4520 Series	⚠	1,043	1,479	1,071	408	1	1,479	1,479.90	Disabled	768	356	1,124
HP Color LaserJet CP4020 Series	⚠	369	464	370	93	1	463	466.00	Disabled	422	21	443
HP Color LaserJet Flow MFP M680	⚠	<Not supported>	242	207	31	3	238	238.00	Disabled	109	66	175
HP Color LaserJet Flow MFP M680	⚠	<Not supported>	1	0	1	0	1	1.00	Disabled	1	0	1
HP Color LaserJet flow MFP M680	⚠	<Not supported>	1,734	967	714	50	1,681	1,690.00	Disabled	1,383	174	1,557
HP Color LaserJet flow MFP M880	⚠	<Not supported>	4,324	<Not supported>	<Not supported>	<Not supported>	<Not supported>	<Not supported>	Disabled	<Not supported>	<Not supported>	<Not supported>
HP Color LaserJet flow MFP M880	⚠	<Not supported>	4,872	2,167	2,680	5	4,847	6,256.00	Disabled	3,126	863	3,989
HP Color LaserJet MFP M680	✓	907	765	142	0	0	907	905.30	Disabled	839	34	873
HP Color LaserJet MFP M680	✓	<Not supported>	16,280	8,148	7,546	4	15,694	15,694.00	Disabled	11,456	2,121	13,577
HP Color LaserJet M655	⚠	<Not supported>	314	116	197	1	313	317.60	Disabled	304	5	309
HP Color LaserJet M750	⚠	<Not supported>	2	1	1	0	2	2.00	Disabled	2	0	2
HP Color LaserJet M750	⚠	<Not supported>	795	775	20	0	795	795.00	Disabled	785	5	790
HP LaserJet 400 color M451dw	✓	14,080	8,337	5,743	0	0	14,080	14,094.40	<Not supported>	12,418	831	13,249
HP LaserJet 400 color M451dw	✓	<Not supported>	32	11	21	0	32	32.00	<Not supported>	30	1	31
HP LaserJet 400 color MFP M475dw	✓	477	338	139	0	0	477	477.00	<Not supported>	371	53	424
HP LaserJet 400 color MFP M475dw	⚠	<Not supported>	251	138	113	0	251	251.00	<Not supported>	243	4	247
HP LaserJet 400 M401dw	⚠	<Not supported>	324	<Not supported>	324	0	324	333.00	<Not supported>	258	33	291
HP LaserJet 500 color M551	⚠	955	728	207	4	0	935	935.00	Disabled	199	370	569
HP LaserJet 500 color M551	⚠	<Not supported>	3,674	2,466	1,128	66	3,594	3,613.50	Disabled	1,300	1,180	2,480
HP LaserJet 500 color MFP M575	⚠	<Not supported>	1,561	1,190	295	81	1,475	1,482.80	Disabled	540	509	1,048

The calculations below are taken from the previous Usage/Configuration Pages from the devices highlighted above in HP Web Jetadmin in blue. The values are given as examples in red type at the end of each calculation description. One additional model, the HP Color LaserJet CM3530 MFP, is also highlighted in blue, only to illustrate the fact that the **Sheets** columns all indicate **Not Supported** because **Duplex Impressions** is enabled on that device.

Column	Location	FutureSmart	Oz	LEDm
Engine Cycle Count	Counters	Matches the Engine Cycle Count on the device Configuration Page. This is the "odometer" for the device containing a count of every sheet of paper to pass through the engine regardless of color/mono, simplex/duplex, or size. 1561	Matches the Engine Cycle Count on the device Configuration Page. This is the "odometer" for the device containing a count of every sheet of paper to pass through the engine regardless of color/mono, simplex/duplex, or size. 9390	Matches the Total Impressions count on the device Configuration Page 251
Total Color Impressions	Counters/Print Usage Counters	Equals the sum of the Color Print + Color Copy Impressions on the device Usage Page $565 + 26 + 589 = 1180$	Equals the (Sum of the Color Simplex counts) + (2 * Sum of Color Duplex Counts) - (Sum of Color Duplex 1 Image counts) on the device Usage Page $(2626 + 2 + 95) + (2 * (1273 + 12 + 354)) - (37 + 1 + 4) = 5959$	Matches the Color Impressions count on the device Configuration Page 190
Total Mono Impressions	Counters/Print Usage Counters	Equals the sum of the Mono Print + Mono Copy Impressions on the device Usage Page $248 + 2 + 45 = 295$	Equals the (Sum of the Mono Simplex counts) + (2 * Sum of Mono Duplex Counts) - (Sum of Mono Duplex 1 Image counts) on the device Usage Page $(2730 + 3 + 4) + (2 * (278 + 8 + 1)) - (9 + 1) = 3301$	Matches the Monochrome Impressions count on the device Configuration Page 113
Total Blank Impressions	Counters/Print Usage Counters	Indicates the number of Impressions (sides) that contained no toner. Not indicated on device Usage page.	Equals the (Sum of Mono Duplex 1 Image counts) + (Sum of Color Duplex 1 Image counts) on the device Usage Page $(37 + 1 + 4) + (9 + 1) = 52$	Indicates the number of Impressions (sides) that contained no toner. Not indicated on device Usage page
Total Impressions	Counters/Print Usage Counters	Equals the sum of the Total Print + Total Copy Impressions on the device Usage Page (also equals WJA columns Total Color Impressions + Total Mono Impressions) $3 + 26 + 2 + 634 = 1475$ (also $1180 + 295 = 1475$)	Equals the (Sum of the Mono and Color Simplex counts) + (2 * Sum of Mono and Color Duplex Counts) - (Sum of Mono and Color Duplex 1 Image counts) on the device Usage Page (also equals WJA columns Total Color Impressions + Total Mono Impressions) $(2626 + 2 + 95 + 2730 + 3 + 4) + (2 * (1273 + 12 + 354 + 278 + 8 + 1)) - (37 + 1 + 4 + 9 + 1) = 9260$ (also $5959 + 3301 = 9260$)	Matches the Total Impressions count on the device Configuration Page (also equals WJA columns Total Color Impressions + Total Mono Impressions) 251
Total Equivalent Impressions	Counters/Print Usage Counters	Multiplies the Total Print and Total Copy impressions against the Unit factor and sums all totals $(813 * 1) + (26 * 1.3) + (2 * 1) + (634 * 1) = 1482.8$	Equals the (Total Printer Usage count) - (sum of mono and color Duplex 1 Image counts multiplied by their unit counts) $10,134.5 - ((9 * 1) + (1 * 2) + (37 * 1) + (1 * 1.3) + (4 * 2)) = 10,077.2$	Matches the Total Equivalent Impressions (AA/Letter) count on the device Configuration Page 251.0
Total Simplex Sheets	Counters/Print Sheet Counters	Total simplex sheets, not indicated on device Usage Page 540	Equals the sum of all mono and color Simplex counts on the device Usage Page $2730 + 3 + 4 + 2626 + 2 + 95 = 5460$	Total simplex sheets, not indicated on device Usage Page 540
Total Duplex Sheets	Counters/Print Sheet Counters	Total duplex sheets, not indicated on device Usage Page 508	Equals the sum of all mono and color Duplex counts on the device Usage Page $278 + 8 + 1 + 1273 + 12 + 354 = 1926$	Total duplex sheets, not indicated on device Usage Page 508
Total Sheets	Counters/Print Sheet Counters	Total Simplex Sheets + Total Duplex Sheets, not indicated on device Usage Page $540 + 508 = 1048$	Equals the sum of all mono and color Simplex and Duplex counts on the device Usage Page (also equals WJA columns Total Simplex Sheets + Total Duplex Sheets) $2730 + 3 + 4 + 2626 + 2 + 95 + 278 + 8 + 1 + 1273 + 12 + 354 = 7386$ (also $5460 + 1926 = 7386$)	Total Simplex Sheets + Total Duplex Sheets, not indicated on device Usage Page $540 + 508 = 1048$
Total Color Count	Obsolete	Not Supported for FutureSmart devices at this time 1180	Matches the Color Engine Cycles on the device Configuration Page. Discussions are underway to rename this column to Color Engine Cycles 5922	Not Supported for LEDM devices

Also note that the FutureSmart devices claim **Not Supported** for **Total Count Color** as described previously. Remember, this is not a recommended column for obtaining an accurate total color count and has been placed in the **Obsolete** category.

HP Web Jetadmin reporting and impressions

Changes to HP Web Jetadmin counters related to impressions can also be observed in Reports. Reports are formatted collections of data that HP Web Jetadmin compiles from stored, historical device detail. A very simple report might show Total Simplex, Total Duplex, Total Color, and Total Monochrome counts for a single month at any point in the past when HP Web Jetadmin was able to collect these details from the device. Figure 2 shows a report for a device with both sheet and impressions counters.

Duplex Impressions	Total Mono	Total Color	Total	Total Blank Impressions	Total Duplex	Total Simplex
Disabled	2*	2*	4*	0*	1*	2*
	2	2	4	0	1	2

Figure 2: Report showing counters for non-duplex impression enabled device

It is fairly easy to use these six counters to arrive at both sheet and impression usage details that actually collate. This example is a very simplistic report, but it reveals how these counters work.

The following sections describe some rules to use with reporting in different releases of HP Web Jetadmin.

HP Web Jetadmin 10.2 Service Release 4 and earlier

Color Simplex, **Mono Simplex**, **Color Duplex**, and **Mono Duplex** values are stored in historic device data and appear in the report.

HP Web Jetadmin 10.2 Service Release 5 and later (rule 1)

Color Simplex, Mono Simplex, Color Duplex, and Mono Duplex values are no longer stored in historical device data because these values are no longer considered supported counters. However, any of these values that were stored before an upgrade to Service Release 5 still appear correctly in reports when the interval is set accordingly.

HP Web Jetadmin 10.2 Service Release 5 and later (rule 2)

Devices that have **Duplex Impressions** enabled no longer have Simplex and Duplex counters stored. Simplex and Duplex values appear as **<Not supported>** in the report.

HP Web Jetadmin 10.2 Service Release 5 and later (rule 3)

This version changed device usage tracking. Depending on the firmware and device model, devices report sheets and impressions differently in Service Release 5. When HP Web Jetadmin generates a report that crosses the Service Release 5 upgrade date, the report notes the following:

"Data from before mm/dd/yyyy hh:mm:ss AM/PM may contain Duplex Impression data. Two Duplex Impressions are approximately equivalent to one Duplex Sheet."

The timestamp (mm/dd/yyyy hh:mm:ss) reflects the time recorded during the HP Web Jetadmin 10.2 Service Release 5 upgrade. Duplex data recorded before this date might have been recorded as either duplex impressions or duplex sheets, depending on whether duplex impressions was enabled, and continues to be reported as the same values. Future duplex data is recorded as duplex sheets. The accuracy is fully dependent on the device firmware and the ability of the device to track impressions.

Summary

Saying that changes to features and devices related to Duplex Impressions is somewhat complex is an understatement. Great care should be taken in evaluating sheet and usage metrics across all devices and features in HP Web Jetadmin.

NOTE: More information about device list columns, including filtering topics, can be found in the *HP Web Jetadmin - Columns and Filters Detail* white paper. This white paper is available on the [HP Web Jetadmin support page](#).

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