Reverse engineering of SNMP OcetetString objects from Brother's printers

That contains printer page counter values and consumables usage

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Revisions:
0.00 - Initial
0.01 – Rewirtten data structure, added HL-L5100DN
0.02 – Some cleaning ;)
0.03 – Added license
0.04 – public release

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Intro

Printers that I based my finding on (I have them at work so I can get accurate data from them via SNMP and http):

- Brother MFC-L8650CDW (laser color, f/w: P / 1.02 / J1605111800 / 1.00)
- Brother DCP-7065DN (laser mono, f/w: J)
- Brother MFC-8880DN (laser mono, f/w: R 1.03)
- Brother MFC-B7715DW (laser, mono, f/w: H / 1.04)
- Brother MFC-L2720DN (laser, mono, f/w: L / 1.06 / F1512090500)
- Brother HL-L5100DN (laser mono, f/w: 1.15 / 1.07)

Printers presents in SNMP 5 or 6 objects which, I believe are direct memory dumps of counters. Or they packed in bizarre way (the padding make no sense for me :/ - it's done so randomly…) – anyone who was coding this must smoke a really weird weeds (>_<) .
Newer printers have also coverage parameter that follows layout of ReplaceCount and JamCount records.

Those OIDs are:

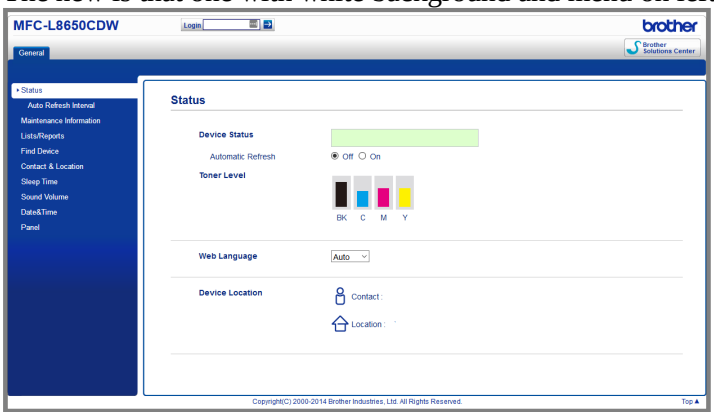
- `1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.10` (**brInfoCounter**) – general counters (pages, each color, drum, etc)
- `1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.8` (**brInfoMaintenance**) – mostly contains remaining life of consumables in percents (in 0.01 units, e.g.: 97.00% is encoded as 9700 integer number).
- `1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.11` **(brInfoNextCare)** - mostly contains remaining life in pages of consumables and other mechanical elements.
- `1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.20` **(brInfoReplaceCount)** – counters how many times what was replaced.
- `1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.21` **(brInfoJamCount**) – counters of paper jams ,
- `1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.18` (**brInfoCoverage**) – this contains only one record with average page coverage .

Those OIDs can be found in BROTHER-MIB module.

I distinguish the printers to two types: with the new web UI, and with the old web UI:

- The old is that blue page with menu on white bar at top of page:

- The new is that one with white background and menu on left side with some tabs at top:



Data structure

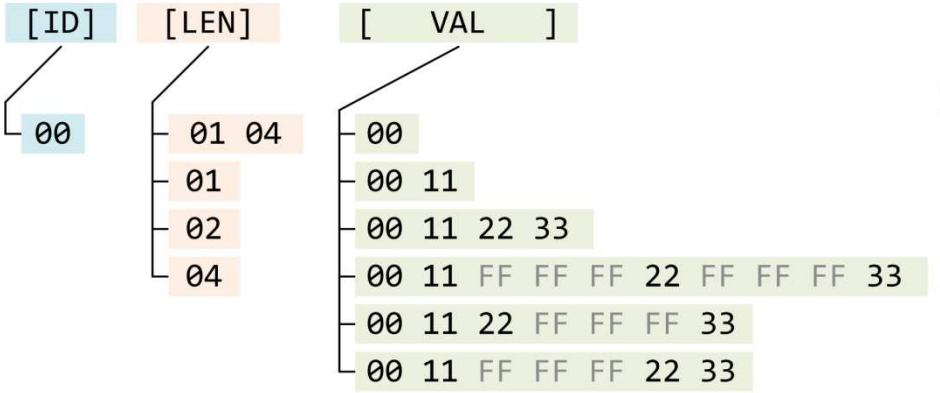
The basic record (I might call it a segment too) structure is:

- 1st byte is record ID,

After ID there can be 2 length layouts – fortunately across all printers the same OID follows that same structure layout, and those are those 2 different layouts:

- Layout #1 (apply for OIDs: brInfoCounter , brInfoMaintenance, brInfoNextCare) – after ID there is sequence (hex) 01 04 – I guessing this: the 01 is some kind of flag, and 04 is a value field length in bytes,
- Layout #2 (apply for OIDs: brInfoReplaceCount, brInfoJamCount, brInfoCoverage): after ID there is 1 byte that define value field length: 01= 1 byte, 02 = 2 bytes ("word"), 04 = 4 bytes (dword / integer).

After length field(s), there is a value 1,2 or 4 bytes long, and this is where starting weird things happens (someone muse have smoked really weird weeds (>_<)), value can be split after 2nd and/or 3rd byte by sequence of 3xFF (3 times 0xFF).



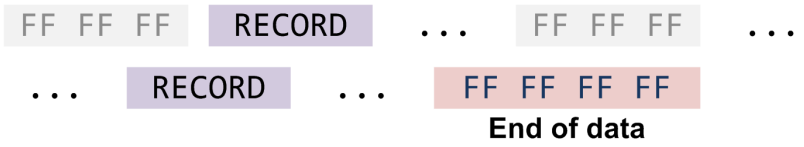
The value field can have:

- a counter value in pages,
- percentage value in 1% resolution,
- percentage value in 0.01% resolution,
- percentage value in 2 bytes, where MSB byte is integer part, and LSB byte is decimal part (.00 - .99) – field can be declared as word/dword value type,
- status value (usually a 1 byte but field is declared as dword value type),

Sometime after the record show up the 3xFF sequence too, also the 3xFF sequence can be placed right at the beginning of whole data block (e.g. brInfoNextCare or brInfoReplaceCount) .
At the end of data block there is sequence of 4xFF (4 time 0xFF) indicating end of data.

Data block layouts:

For brInfoNextCare or brInfoReplaceCount it's:



I think for parsing the byte-stream: I'd first strip the stream from EndOfData field, and then cut out all 3xFF sequences (0xFFFFFF = 16'777'215(dec) – I don't think there would be a printer with that value in any counter). After that we get a nice clean data block ☺ .

Few numbers about consumables for each printer

MFC-L8650CDW consumables:

P/N	Description	Life
BU320CL	Transfer belt	50 000 p
DR321CL	Drum unit	25 000 p
TN321BK	Toner, black	2 500 p
TN321C/-M/-Y	Toner, color	1 500 p
TN326BK	Toner, black	4 000 p
TN326C/-M/-Y	Toner, color	3 500 p
WT-320CL	Waste box toner	50 000 p

DCP-7065DN consumables:

P/N	Description	Life
DR2200	Drum unit	12 000 p
TN2220	Toner, black	2 600 p

MFC-8880DN consumables:

P/N	Description	Life
DR3200	Drum unit	25 000 p
TN3280	Toner, black	8 000 p

HL-L5100DN consumables:

P/N	Description	Life
DR3400	Drum unit	50 000 p
TN3480	Toner, black	8 000 p

MFC-B7715DW consumables:

P/N	Description	Life
DR-B023	Drum unit	12 000 p
TN-B023	Toner, black	2 000 p

MFC-L2720DW consumables:

P/N	Description	Life
DR2300	Drum unit	12 000 p
TN2320	Toner, black	2 600 p

MFC-L8650CDW

This printer have new web UI, but don’t have yet implemented calculation of page coverage.

MFC-L8650CDW - brInfoCounter

OID: `1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.10` (**brInfoCounter**)

RAW:000104000021fffffffa020104000013ffffffd001010400000e2a160104000056ffffffa1⌟
1301040000135014010400013ffffffd015010400000dffffffcd120104000021ffffffb4ffffffff

```
Stream length: 78 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: 00 01 04 00 00 21 FF FF FF FA 02 01 04 00 00 13 .....!..........
00000010: FF FF FF D0 01 01 04 00 00 0E 2A 16 01 04 00 00 ..........*.....
00000020: 56 FF FF FF A1 13 01 04 00 00 13 50 14 01 04 00 V..........P....
00000030: 00 13 FF FF FF D0 15 01 04 00 00 0D FF FF FF CD ................
00000040: 12 01 04 00 00 21 FF FF FF B4 FF FF FF FF      .....!........
```

HTTP:

```
Device Status
        Page Counter     :  8698 [21 FA] #00 (this might be in brInfoMaintenance?)
        Color            :  5072 [13 D0] #02
        B&W              :  3626 [0E 2A] #01
        Image Count Total: 22177 [56 A1] #16
        Cyan             :  4944 [13 50] #13
        Magenta          :  5072 [13 D0] #14
        Yellow           :  3533 [0D CD] #15
        Black            :  8628 [21 B4] #12
        Drum Count       :  8698 [21 FA] #00
```

RAW data organized in segments:

```
#00   8698 = 00.0104.000021fffffffa - drum count
#02   5072 = 02.0104.000013ffffffd0 - Color page count
#01   3626 = 01.0104.00000e2a       - B/W page count
#16  22177 = 16.0104.000056ffffffa1 - Image count total
#13   4944 = 13.0104.00001350       - Cyan color count
#14   5072 = 14.0104.000013ffffffd0 - Magenta color count
#15   3533 = 15.0104.00000dffffffcd - Yellow color count
#12   8628 = 12.0104.000021ffffffb4 - Black color count
#padEnd    = ffffffff
```

MFC-L8650CDW - brInfoMaintenance

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.8 (**brInfoMaintenance**)

RAW:6301040000000168010400000001550104000000013101040000000132010400000001330104000000013401040000001700104000011ffffff94ffffff8201040000003271010400001518ffffff8301040000003c72010400001518ffffff8401040000003c6f010400001effffffdcffffff8101040000005 0ffffff8701040000000afffffff8801040000000afffffff8901040000000afffffff8601040000000a410104000019ffffffc869010400001bffffffbc110104000021ffffffff9670104000000016b0104000023ffffffff0540104000000016601040000000135010400000016a0104000023ffffffff06c0104000027106d010400002454ffffffff

```
Stream length: 259 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: 63 01 04 00 00 00 01 68 01 04 00 00 00 01 55 01 c·····h·····U·
00000010: 04 00 00 00 01 31 01 04 00 00 00 01 32 01 04 00 ·····1·····2···
00000020: 00 00 01 33 01 04 00 00 00 01 34 01 04 00 00 00 ···3·····4·····
00000030: 01 70 01 04 00 00 11 FF FF FF 94 FF FF FF 82 01 ·p··············
00000040: 04 00 00 00 32 71 01 04 00 00 15 18 FF FF FF 83 ····2q··········
00000050: 01 04 00 00 00 3C 72 01 04 00 00 15 18 FF FF FF ·····<r·········
00000060: 84 01 04 00 00 00 3C 6F 01 04 00 00 1E FF FF FF ·····<o·········
00000070: DC FF FF FF 81 01 04 00 00 00 50 FF FF FF 87 01 ··········P·····
00000080: 04 00 00 00 0A FF FF FF 88 01 04 00 00 00 0A FF ················
00000090: FF FF 89 01 04 00 00 00 0A FF FF FF 86 01 04 00 ················
000000A0: 00 00 0A 41 01 04 00 00 19 FF FF FF C8 69 01 04 ···A·········i··
000000B0: 00 00 1B FF FF FF BC 11 01 04 00 00 21 FF FF FF ··············!···
000000C0: F9 67 01 04 00 00 00 01 6B 01 04 00 00 23 FF FF ·g·····k····#··
000000D0: FF F0 54 01 04 00 00 00 01 66 01 04 00 00 00 01 ··T·····f·····
000000E0: 35 01 04 00 00 00 01 6A 01 04 00 00 23 FF FF FF 5·····j····#···
000000F0: F0 6C 01 04 00 00 27 10 6D 01 04 00 00 24 54 FF ·l····'·m····$T·
00000100: FF FF FF                                       ···
```

HTTP:

```
Node Information
        Model Name: Brother MFC-L8650CDW
Device Status
        Page Counter     :  8697 [21 F9] #11 (this might actually in brInfoCounter ??)
        Drum Count       :  8697 [21 F9] #11
Remaining Life
        Drum Unit*: 16303pages [3F AF] ; max=25000
             (% of Life Remaining): (66.00%) (6600= 19 C8) #41
        Belt Unit:  35302pages [89 E6] ; 50000-35302=14698[39 6A]
             (% of Life Remaining): (71.00%) (7100= 1B BC) #69
        Fuser Unit: 91303pages [01 64 A7]; max=100000
             (% of Life Remaining): (92.00%)  (9200 = 23 F0) #6B (or #6A)
        Laser Unit: 91303pages [01 64 A7]; max=100000
             (% of Life Remaining): (92.00%)  (9200= 23 F0) #6A (or #6B)
        Paper Feeding Kit MP: 49542pages [C1 86] ; max=60000?
             (% of Life Remaining): (100.00%)  (10000= 27 10)
        Paper Feeding Kit 1: 92666pages [01 69 FA] ; max=100000
             (% of Life Remaining): (93.00%) (9300= 24 54)
        Toner Cyan (C)**: (50.00%) [32] #82       / #87 = 10 [0A] - minimum warning level? (Cyan)
        Toner Magenta (M)**: (60.00%) [3C] #83    / #88 = 10 [0A] - minimum warning level? (magenta)
        Toner Yellow (Y)**: (60.00%) [3C] #84     / #89 = 10 [0A] - minimum warning level? (yellow)
        Toner Black (BK)**: (80.00%) [50] #81     / #86 = 10 [0A] - minimum warning level? (black)
```

Looking how toner colors are in sequence (3 indexes in succession, followed by 4th that is lower than first) - I think is safely to assume that that kind of data constructions refer to toners.

RAW reorganized into segments:

```
#63      1 = 63.0104.00000001              - ? - long shoot: might be drum status (1-ok, 2-ending, 3-used, need replace)
#68      1 = 68.0104.00000001              - ?
#55      1 = 55.0104.00000001              - ?
#31      1 = 31.0104.00000001              - ?
#32      1 = 32.0104.00000001              - ?
#33      1 = 33.0104.00000001              - ?
#34      1 = 34.0104.00000001              - ?
```

```
#70   4500 = 70.0104.000011ffffff94ffffff  - ?
#82     50 = 82.0104.00000032              - Toner cyan level in 1%
#71   5400 = 71.0104.00001518ffffff        - ?
#83     60 = 83.0104.0000003c              - Toner magenta level in 1%
#72   5400 = 72.0104.00001518ffffff        - ?
#84     60 = 84.0104.0000003c              - Toner yellow level in 1%
#6f   7900 = 6f.0104.00001effffffdcffffff  - ?
#81     80 = 81.0104.00000050ffffff        - Toner black level in 1%
#87     10 = 87.0104.0000000affffff        - ?
#88     10 = 88.0104.0000000affffff        - ?
#89     10 = 89.0104.0000000affffff        - ?
#86     10 = 86.0104.0000000a              - ?
#41   6600 = 41.0104.000019ffffffc8        - Drum unit remaining life in 0.01%
#69   7100 = 69.0104.00001bffffffbc        - Belt unit remaining life in 0.01%
#11   8697 = 11.0104.000021fffffff9        - Drum unit page count
#67      1 = 67.0104.00000001              - ?
#6b   9200 = 6b.0104.000023fffffff0        - Fuser/Laser unit remaining life in 0.01%
#54      1 = 54.0104.00000001              - ?
#66      1 = 66.0104.00000001              - ?
#35      1 = 35.0104.00000001              - ?
#6a   9200 = 6a.0104.000023fffffff0        - Fuser/Laser unit remaining life in 0.01%
#6c  10000 = 6c.0104.00002710              - PF KIT MP remaining life in 0.01%
#6d   9300 = 6d.0104.00002454              - PF KIT 1 remaining life in 0.01%
#padEnd    = ffffffff
```

It’s difficult to tell if #6B/#6A is a laser or fuser remaining life because those are almost never replaced and theirs counters are always identical.

MFC-L8650CDW - brInfoNextCare

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.11 **(brInfoNextCare)**

RAW:ffffff82010400003fffffffaffffffff8801040000ffffff89ffffffe6ffffff890104000164ffffffa7730104000164ffffffa7ffffff8601040000ffffffc1ffffff86770104000169ffffffffaffffffff

```
Stream length: 82 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: FF FF FF 82 01 04 00 00 3F FF FF FF AF FF FF FF ........?.......
00000010: 88 01 04 00 00 FF FF FF 89 FF FF FF E6 FF FF FF ................
00000020: 89 01 04 00 01 64 FF FF FF A7 73 01 04 00 01 64 .....d....s....d
00000030: FF FF FF A7 FF FF FF 86 01 04 00 00 FF FF FF C1 ................
00000040: FF FF FF 86 77 01 04 00 01 69 FF FF FF FA FF FF ....w....i......
00000050: FF FF                                          ..
```

HTTP:

```
Node Information
        Model Name: Brother MFC-L8650CDW
Remaining Life
        Drum Unit*: 16303pages [3F AF] #82 ; max=25000
        Belt Unit: 35302pages [89 E6] #88 ; 50000-35302=14698[39 6A]
        Fuser Unit: 91303pages [01 64 A7] #89 ; max=100000
        Laser Unit: 91303pages [01 64 A7] #73 ; max=100000
        Paper Feeding Kit MP: 49542pages [C1 86] #86 ; max=50000
        Paper Feeding Kit 1: 92666pages [01 69 FA] #? ; max=100000
```

I think the value in #77 relate to wear level of mechanics after fuser that redirect a sheet for duplex printing – I'm guessing only , it might be also PFK counter which exclude front trays...

RAW reorganized into segments:

```
#pad       = ffffff
#82  16303 = 82.0104.00003fffffffaf ffffff       - Drum unit remaining pages count
#88  35302 = 88.0104.0000ffffff89ffffffe6 ffffff - Belt unit remaining pages count
#89  91303 = 89.0104.000164ffffffa7              - Fuser unit remaining pages count
#73  91303 = 73.0104.000164ffffffa7 ffffff       - Laser unit remaining pages count
#86  49542 = 86.0104.0000ffffffc1ffffff86        - PF Kit MP remaining pages count
#77  92591 = 77.0104.000169ffffffa               - PF Kit 1? remaining pages count (value: 92666)
#padEnd    = ffffffff
```

MFC-L8650CDW - brInfoReplaceCount

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.20 **(brInfoReplaceCount)**

RAW:ffffff870100ffffffa10103ffffffa20102ffffffa30102ffffff820100ffffffa00104ffffff880100fff
fff890100730100ffffff860100770100ffffffff

```
Stream length: 64 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: FF FF FF 87 01 00 FF FF FF A1 01 03 FF FF FF A2 ................
00000010: 01 02 FF FF FF A3 01 02 FF FF FF 82 01 00 FF FF ................
00000020: FF A0 01 04 FF FF FF 88 01 00 FF FF FF 89 01 00 ................
00000030: 73 01 00 FF FF FF 86 01 00 77 01 00 FF FF FF FF s........w......
```

HTTP:

```
Replace Count
        Toner Cyan (C)      : 3 [03] #A1
        Toner Magenta (M)   : 2 [02] #A2
        Toner Yellow (Y)    : 2 [02] #A3
        Toner Black (BK)    : 4 [04] #A0
        Drum Unit           : 0 [00] #82
        Belt Unit           : 0 [00] #88
        Fuser Unit          : 0 [00] #89
        Laser Unit          : 0 [00] #73
        Paper Feeding Kit MP: 0 [00] #86
        Paper Feeding Kit 1 : 0 [00] #77
        Waste Toner Box     : 0 [00] #87
```

All values where is 0 – I'm only guessing what it refer to, by looking at segment Id from previous sections.

RAW reorganized into segments: note the 2nd byte – It's very likely data field length in bytes.

```
#pad    = ffffff
#87   0 = 87.01.00ffffff   - Toner waste box (? not sure) replace counter
#a1   3 = a1.01.03ffffff   - Toner cyan replace counter
#a2   2 = a2.01.02ffffff   - Toner magenta replace counter
#a3   2 = a3.01.02ffffff   - Toner yellow replace counter
#82   0 = 82.01.00ffffff   - Drum unit (?) replace counter
#a0   4 = a0.01.04ffffff   - Toner black replace counter
#88   0 = 88.01.00ffffff   - Belt unit (?) replace counter
#89   0 = 89.01.00         - Fuser unit (?) replace counter
#73   0 = 73.01.00ffffff   - Laser unit (?) replace counter
#86   0 = 86.01.00         - PF Kit MP (?) replace counter
#77   0 = 77.01.00         - PF Kit 1 (?) replace counter
#padEnd = ffffffff
```

MFC-L8650CDW - brInfoJamCount

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.21 **(brInfoJamCount)**

RAW: 0002000301020001210200022202000023020000250200012602000fffffffa10400000006ffffffff

```
Stream length: 41 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: 00 02 00 03 01 02 00 01 21 02 00 02 22 02 00 00 ........!...".....
00000010: 23 02 00 00 25 02 00 01 26 02 00 00 FF FF FF A1 #...%...&.......
00000020: 04 00 00 00 06 FF FF FF FF                      .........
```

HTTP:

```
Total Paper Jams    : 6 [06] #A1
        Jam MP Tray : 3 [03] #00
        Jam Tray 1  : 1 [01] #01
        Jam Inside  : 2 [02] #21
        Jam Rear    : 0 [00] #22
        Jam 2-sided : 0 [00] #23
        Total Paper Jams (ADF 1-sided)***: 1 [01] #25
        Total Paper Jams (ADF 2-sided)***: 0 [00] #26
```

RAW reorganized into segments:

```
#00  3 = 00.02.0003              - Jam count at MP tray
#01  1 = 01.02.0001              - Jam count at Tray 1
#21  2 = 21.02.0002              - Jam count inside
#22  0 = 22.02.0000              - Jam count in rear
#23  0 = 23.02.0000              - Jam count at duplex unit
#25  1 = 25.02.0001              - Jam count at ADF single side
#26  0 = 26.02.0000ffffff        - Jam count at ADF duplex unit
#A1  6 = a1.04.00000006          - Total jam count
#pad   = ffffffff
```

DCP-7065DN

This printer using older web UI and it have a bit different segment layout for **brInfoCounter**: value is split into 2x16bit pieces with 3xFF separator.

DCP-7065DN - brInfoCounter

OID: `1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.10` (**brInfoCounter**)

RAW: `0001040000ffffffb2bffffffff`

```
Stream length: 14 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: 00 01 04 00 00 FF FF FF FB 2B FF FF FF FF        .........+....
```

HTTP:

```
Node Information
    Model Name       : Brother DCP-7065DN
    Firmware Version : J
    Memory Size      : 32 Mbytes
Device Status
    Page Counter : 64299 [FB 2B] #00
    Drum Count   : 25642 [64 2A]
```

RAW data organized in segments:

```
#00  64299 = 00.0104.0000.ffffffb2bffffffff - page counter
#padEnd    = ffffffff
```

DCP-7065DN - brInfoMaintenance

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.8 (**brInfoMaintenance**)

RAW: 6301040000000311010400006 42a4101040000000031010400000016f010400000fffffffa0ffffffff

```
Stream length: 42 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: 63 01 04 00 00 00 03 11 01 04 00 00 64 2A 41 01 c···········d*A·
00000010: 04 00 00 00 00 31 01 04 00 00 00 01 6F 01 04 00 ·····1····o···
00000020: 00 0F FF FF FF A0 FF FF FF FF                   ··········
```

HTTP:

```
Node Information
    Model Name       : Brother DCP-7065DN
Device Status
    Page Counter     : 64299 [FB 2B]
    Drum Count       : 25642 [64 2A] #11
Remaining Life
    Drum Unit*       : 0 pages [00 00] (% of Life Remaining: 0.00% [00 00] #41)
    Toner**          : ■■■■□□□□□□ (c.a. 40% left 4000=[0F A0] #6F )
Total Pages Printed
    Plain/Thin/Recycled            : 64303 pages [FB 2F]
    Thick/Thicker/Bond             : 1 pages [00 01]
    Envelopes/Env. Thick/Env. Thin : 0 pages [00 00]
    Label                          : 0 pages [00 00]
Replace Count
    Drum Unit :  3 [00 03] #63
    Toner     : 24 [00 18]
```

RAW reorganized into segments:

```
#63      3 = 63.0104.00000003          - ? - long shoot: might be drum status (1-ok, 2-ending, 3-used, need replace)
#11  25642 = 11.0104.0000642a          - Drum page count
#41      0 = 41.0104.00000000          - Drum unit remaining life [in 0.01%]
#31      1 = 31.0104.00000001          - ? ? ?
#6f   4000 = 6f.0104.00000f.ffffff.a0 - Toner remaining life [in 0.01%]
#pad       = ffffffff
```

DCP-7065DN - brInfoNextCare

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.11 **(brInfoNextCare)**

RAW: ffffff82010400000000ffffffff

```
Stream length: 14 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: FF FF FF 82 01 04 00 00 00 00 FF FF FF FF       ..............
```

HTTP:

```
Remaining Life
    Drum Unit*       : 0 pages [00 00] #82
    Toner**     ■■■■□□□□□□ (c.a. 40% left 4000=[0F A0] / 40=[28])
```

RAW reorganized into segments:

```
#pad      = ffffff
#82     0 = 82.0104.00000000  - Drum remaining life pages
#padEnd   = ffffffff
```

DCP-7065DN - brInfoReplaceCount

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.20 **(brInfoReplaceCount)**

RAW: ffffff820103ffffffa00118ffffffff

```
Stream length: 16 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: FF FF FF 82 01 03 FF FF FF A0 01 18 FF FF FF FF ................
```

HTTP:

```
Replace Count
    Drum Unit :  3 [03] #82
    Toner     : 24 [18] #A0
```

RAW reorganized into segments:

```
#pad      = ffffff
#82     3 = 82.01.03ffffff - Drum replace count
#A0    24 = a0.01.18       - Toner replace count
#padEnd   = ffffffff
```

DCP-7065DN - brInfoJamCount

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.21 **(brInfoJamCount)**

RAW: 0102000221020000a22020001230200002502001 4ffffffa1040000000dffffffff

```
Stream length: 33 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: 01 02 00 02 21 02 00 0A 22 02 00 01 23 02 00 00 ....!...".../...
00000010: 25 02 00 14 FF FF FF A1 04 00 00 00 0D FF FF FF %...............
00000020: FF                                              .
```

HTTP:

```
Total Paper Jams : 13 [00 00 00 0D] #A1
    Jam Tray 1   : 2  [00 02] #01
    Jam Inside   : 10 [00 0A] #21
    Jam Rear     : 1  [00 01] #22
    Jam Duplex   : 0  [00 00] #23
Total Paper Jams (ADF)*** : 20 [00 14] #25
```

RAW reorganized into segments:

```
#01    2 = 01.02.0002       - Paper jam count: tray 1
#21   10 = 21.02.000a       - Paper jam count: inside
#22    1 = 22.02.0001       - Paper jam count: rear
#23    0 = 23.02.0000       - Paper jam count: duplex unit
#25   20 = 25.02.0014ffffff - Paper jam count: ADF
#a1   13 = a1.04.0000000d   - Total paper jam count
#padEnd  = ffffffff
```

MFC-8880DN

This is oldest printer that I have, it use older web UI, like DCP-7065 it have brInfoCounter record value split in half by 3xFF separator.

MFC-8880DN - brInfoCounter

OID: `1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.10` (**brInfoCounter**)

RAW: `0001040002ffffffde53ffffffff`

```
Stream length: 14 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: 00 01 04 00 02 FF FF FF DE 53 FF FF FF FF       .........S....
```

HTTP:

```
Node Information
    Model Name           : Brother MFC-8880DN
    Firmware Version     : Q
    Sub Firmware Version : 1.03
    Memory Size          : 64 Mbytes
Device Status
    Page Counter  : 187987 [02 DE 53] #00
    Drum Count    : 3967   [0F 7F]
```

RAW data organized in segments:

```
#00  187987 = 00.0104.0002.ffffff.de53 - Page counter
#padEnd     = ffffffff
```

MFC-8880DN - brInfoMaintenance

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.8 (**brInfoMaintenance**)

RAW:

```
6301040000000111010400000f7f410104000021ffffff98310104000000016f0104000016ffffffa8670104000
000016b010400001c2054010400000000166010400000001350104000000036a010400001c206c0104000027106d
0104000000000ffffffff
```

```
Stream length: 101 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: 63 01 04 00 00 00 01 11 01 04 00 00 0F 7F 41 01 c·············A·
00000010: 04 00 00 21 FF FF FF 98 31 01 04 00 00 00 01 6F ···!····1·····o
00000020: 01 04 00 00 16 FF FF FF A8 67 01 04 00 00 00 01 ·········g·····
00000030: 6B 01 04 00 00 1C 20 54 01 04 00 00 00 01 66 01 k····· T·····f·
00000040: 04 00 00 00 01 35 01 04 00 00 00 03 6A 01 04 00 ·····5·····j···
00000050: 00 1C 20 6C 01 04 00 00 27 10 6D 01 04 00 00 00 ·· l····'·m·····
00000060: 00 FF FF FF FF                                  ·····
```

HTTP:

```
Device Status
    Page Counter  : 187987 [02 DE 53]
    Drum Count    : 3967   [0F 7F] #11
Remaining Life
    Drum Unit*     21033 pages [52 29]    (% remaining 86.00% 86=[56] / 8600=[21 98] #41)
    Fuser Unit     71175 pages [01 16 07] (% remaining 72.00% 72=[48] / 7200=[1C 20] #6B)
    Laser Unit     71175 pages [01 16 07] (% remaining 72.00% 72=[48] / 7200=[1C 20] #6A)
    Paper Feeding Kit MP     49381 pages [C0 E5] (% remaining 100.00% 100=[64] / 10000=[27 10] #6C)
    Paper Feeding Kit 1      0 pages     [00 00] (% remaining   0.00%   0=[00] /     0=[00 00])
    Toner**     ■■■■■□□□□□
         ( from squares c.a. 50.0%  50=[32] 5000=[13 88] | ID=6F: 58.0% 5800=[16 A8] #6F)
```

RAW data organized in segments:

```
#63       1 = 63.0104.00000001          - ? - long shoot: might be drum status (1-ok, 2-ending, 3-used, need replace)
#11    3967 = 11.0104.00000f7f          - Drum count pages
#41    8600 = 41.0104.000021.ffffff.98  - Drum unit remaining life % (in 0.01%)
#31       1 = 31.0104.00000001          - ?
#6F    5800 = 6f.0104.000016.ffffff.a8  - Toner remaining life % (in 0.01%)
#67       1 = 67.0104.00000001          - ?
#6B    7200 = 6b.0104.00001c20          - Fuser unit (or laser unit) remaining life % (in 0.01%)
#54       1 = 54.0104.00000001          - ?
#66       1 = 66.0104.00000001          - ?
#35       3 = 35.0104.00000003          - ?
#6A    7200 = 6a.0104.00001c20          - Laser unit (or fuser unit) remaining life % (in 0.01%)
#6C   10000 = 6c.0104.00002710          - PF Kit MP remaining life % (in 0.01%)
#6D       0 = 6d.0104.00000000          - PF Kit 1 remaining life % (in 0.01%) (ID from L8650)
#padEnd    = ffffffff
```

MFC-8880DN - brInfoNextCare

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.11 **(brInfoNextCare)**

RAW:

```
ffffff82010400005229ffffff8901040001160773010400011607ffffff8601040000ffffffc0fffffe577010
400000000ffffffff

Stream length: 54 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: FF FF FF 82 01 04 00 00 52 29 FF FF FF 89 01 04 ........R).......
00000010: 00 01 16 07 73 01 04 00 01 16 07 FF FF FF 86 01 ....s...........
00000020: 04 00 00 FF FF FF C0 FF FF FF E5 77 01 04 00 00 ...........w....
00000030: 00 00 FF FF FF FF                               ......
```

HTTP:

```
Remaining Life
    Drum Unit*     21033 pages [52 29] #82
    Fuser Unit     71175 pages [01 16 07] #89
    Laser Unit     71175 pages [01 16 07] #73
    Paper Feeding Kit MP  49381 pages [C0 E5] #86
    Paper Feeding Kit 1     0 pages      [00 00] #77
    Toner**     ■■■■■□□□□□
```

RAW data organized in segments:

```
#pad       = ffffff
#82  21033 = 82.0104.00005229ffffff           - Drum unit pages
#89  71175 = 89.0104.00011607                 - Fuser unit pages
#73  71175 = 73.0104.00011607ffffff           - Laser unit pages
#86  49381 = 86.0104.0000.ffffff.c0.ffffff.e5 - PF Kit MP pages
#77      0 = 77.0104.00000000                 - PF Kit 1 pages
#padEnd    = ffffffff
```

MFC-8880DN - brInfoReplaceCount

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.20 **(brInfoReplaceCount)**

RAW: ffffff820103ffffffa00117ffffff890102730101ffffff8601007701 00ffffffff

```
Stream length: 34 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: FF FF FF 82 01 03 FF FF FF A0 01 17 FF FF FF 89 ................
00000010: 01 02 73 01 01 FF FF FF 86 01 00 77 01 00 FF FF ..s........w....
00000020: FF FF                                           ..
```

HTTP:

```
Replace Count
    Drum Unit              3 [03] #82
    Fuser Unit             1 [01] #73
    Laser Unit             2 [02] #89
    Paper Feeding Kit MP   0 [00] #86
    Paper Feeding Kit 1    0 [00] #77
    Toner                 23 [17] #A0
```

RAW data organized in segments:

```
#pad    = ffffff
#82   3 = 82.01.03ffffff - Drum unit replace count
#A0  23 = a0.01.17ffffff - Toner replace count
#89   2 = 89.01.02       - Laser unit replace count
#73   1 = 73.01.01ffffff - Fuser unit replace count
#86   0 = 86.01.00       - PF Kit MP /or/ Kit 1
#77   0 = 77.01.00       - PF Kit 1 /or/ Kit MP
#padEnd = ffffffff
```

I have never replaced Laser and Fuser units, but I did from Service Menu reset them – lucky me, now I can tell those counters apart :-D .

MFC-8880DN - brInfoJamCount

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.21 **(brInfoJamCount)**

RAW:

```
00020001010200312102005c22020009230200052502 00ffffffb426020004ffffffa104000000ffffff9cffffffff
```

```
Stream length: 47 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: 00 02 00 01 01 02 00 31 21 02 00 5C 22 02 00 09 .......1!..\"...
00000010: 23 02 00 05 25 02 00 FF FF FF B4 26 02 00 04 FF #...%......&....
00000020: FF FF A1 04 00 00 00 FF FF FF 9C FF FF FF FF ................
```

HTTP:

```
Total Paper Jams   156 [00 9C] #A1
    Jam MP Tray      1 [00 01] #00
    Jam Tray 1      49 [00 31] #01
    Jam Inside      92 [00 5C] #21
    Jam Rear         9 [00 09] #22
    Jam Duplex       5 [00 05] #23
Total Paper Jams (ADF SX)***  180 [00 B4] #25
Total Paper Jams (ADF DX)***    4 [00 04] #26
```

RAW data organized in segments:

```
#00     1 = 00.02.0001             - Jam MP Tray
#01    49 = 01.02.0031             - Jam Tray 1
#21    92 = 21.02.005c             - Jam inside
#22     9 = 22.02.0009             - Jam rear
#23     5 = 23.02.0005             - Jam duplex unit
#25   180 = 25.02.00.ffffff.b4     - Total jams at ADF single page
#26     4 = 26.02.0004ffffff      - Total jams at ADF duplex unit
#A1   156 = a1.04.000000.ffffff.9c - Total paper jams
#padEnd   = ffffffff
```

MFC- B7715DW

This is a rather new printer (compared to 8880DN :D), it have also new web UI.

MFC- B7715DW - brInfoCounter

OID: `1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.10` (**brInfoCounter**)

RAW: 00010400002a3e06010400000236ffffffff

```
Stream length: 18 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: 00 01 04 00 00 2A 3E 06 01 04 00 00 02 36 FF FF .....*>......6..
00000010: FF FF                                           ..
```

HTTP:

```
Node Information
        Model Name            : Brother MFC-B7715DW series
        Main Firmware Version : H
        Sub1 Firmware Version : 1.04
        Memory Size           : 128MB
Device Status
        Page Counter          : 10814 [2A 3E] #00
Total Pages Printed
        Total         : 10814Page(s) [2A 3E] #00
        2-sided Print : 566          [02 36] #06
```

RAW data organized in segments:

```
#00  10814 = 00.0104.00002a3e - Page counter
#06    566 = 06.0104.00000236 - Duplex unit pages
#padEnd    = ffffffff
```

MFC- B7715DW - brInfoCoverage

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.18 (**brInfoCoverage**)

RAW: 0002050dffffffff

```
Stream length: 8 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: 00 02 05 0D FF FF FF FF                          ........
```

HTTP:

```
Node Information
        Model Name            : Brother MFC-B7715DW series
Device Status
        Page Counter          : 10814 [2A 3E]
        Average Coverage****  : 5.13% [05 0D] #00 (5=0x05 integer , 13=0x0D decimal)
```

RAW data organized in segments:

```
#00  5 13 = 00.02.050d - Average Coverage
#padEnd   = ffffffff
```

MFC- B7715DW - brInfoMaintenance

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.8 (**brInfoMaintenance**)

RAW:

```
6301040000000141010400000 3ffffffe811010400002a3931010400000016f010400001dffffffb0ffffff810
10400000050ffffffff

Stream length: 55 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: 63 01 04 00 00 00 01 41 01 04 00 00 03 FF FF FF c·····A·····
00000010: E8 11 01 04 00 00 2A 39 31 01 04 00 00 00 01 6F ·····*91·····o
00000020: 01 04 00 00 1D FF FF FF B0 FF FF FF 81 01 04 00 ···············
00000030: 00 00 50 FF FF FF FF                           ··P····
```

HTTP:

```
Device Status
        Page Counter: 10814 [2A 3E]
Remaining Life
        Drum Unit*   : 10% [03 E8] (in 0.01% => 1000=10%) #41
        Toner**      : 80% [00 50] #81
```

If we add #11=10809 to **brInfoNextCare**.#82=1191 then we get 12000 which is a drum unit page life ☺

RAW data organized in segments:

```
#63     1 = 63.0104.00000001                - ? - long shoot: might be drum status (1-ok, 2-ending, 3-used, need replace)
#41  1000 = 41.0104.000003.ffffff.e8        - Remaining life: drum unit (in 0.01%)
#11 10809 = 11.0104.00002a39                - Drum unit page count (?)
#31     1 = 31.0104.00000001                - ?
#6f  7600 = 6f.0104.00001d.ffffff.b0.ffffff - ?
#81    80 = 81.0104.00000050                - Remaining life: Toner (in 1%)
#padEnd   = ffffffff
```

MFC- B7715DW - brInfoNextCare

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.11 **(brInfoNextCare)**

RAW: ffffff820104000004ffffffa7ffffffff

```
Stream length: 17 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: FF FF FF 82 01 04 00 00 04 FF FF FF A7 FF FF FF ................
00000010: FF                                              .
```

HTTP:

```
Remaining Life
       Drum Unit*  : 10% [0A] / [03 E8]
```

10% from 12000p = 1200, the value 1191 fit the bill (1191*100/12000=9,925% = ~10%) ☺

RAW data organized in segments:

```
#pad      = ffffff
#82  1191 = 82.0104.000004.ffffff.a7 – drum unit remaining life (pages)
#padEnd   = ffffffff
```

MFC- B7715DW - brInfoReplaceCount

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.20 **(brInfoReplaceCount)**

RAW: ffffff820101ffffffa00106ffffffff

```
Stream length: 16 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: FF FF FF 82 01 01 FF FF FF A0 01 06 FF FF FF FF ................
```

HTTP:

```
Replace Count
       Toner     : 6 [06] #A0
       Drum Unit : 1 [01] #82
```

RAW data organized in segments:

```
#pad   = ffffff
#82   1 = 82.01.01 ffffff – Drum replace count
#A0   6 = a0.01.06         - Toner replace count
#padEnd = ffffffff
```

MFC- B7715DW - brInfoJamCount

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.21 **(brInfoJamCount)**

RAW: 0002000001020000210200002202000023020000250200 01ffffffa10400000000ffffffff

```
Stream length: 37 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: 00 02 00 00 01 02 00 00 21 02 00 00 22 02 00 00 ........!...".....
00000010: 23 02 00 00 25 02 00 01 FF FF FF A1 04 00 00 00 #...%...........
00000020: 00 FF FF FF FF                                  .....
```

HTTP:

```
Total Paper Jams: 0 [00 00] #A1
        Jam Tray 1  : 0 [00 00] #01
        Jam Inside  : 0 [00 00] #21
        Jam Rear    : 0 [00 00] #22
        Jam 2-sided : 0 [00 00] #23
Total Paper Jams (ADF)*** : 1 [00 01] #25
```

Because this printer don't have any jams (yet), I identified IDs using previous findings.

RAW data organized in segments:

```
#00   0 = 00.02.0000        - Jam count: MP Tray
#01   0 = 01.02.0000        - Jam count: Tray 1
#21   0 = 21.02.0000        - Jam count: inside
#22   0 = 22.02.0000        - Jam count: rear
#23   0 = 23.02.0000        - Jam count: duplex unit
#25   1 = 25.02.0001.ffffff - Jam count: ADF
#A1   0 = a1.04.00000000    - Total paper jam count
#padEnd = ffffffff
```

MFC-L2720DW

On this printer no one bothered ever to reset drum counter :lol: so the drum have insane endurance :rotfl: . Printer with new web UI.

MFC-L2720DW - brInfoCounter

OID: `1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.10` (**brInfoCounter**)

RAW: `0001040001ffffff8dffffff9fffffffff`

```
Stream length: 17 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: 00 01 04 00 01 FF FF FF 8D FF FF FF 9F FF FF FF ................
00000010: FF                                               .
```

HTTP:

```
Node Information
        Model Name: Brother MFC-L2720DW series
        Main Firmware Version: L
        Sub1 Firmware Version: 1.06
        Sub2 Firmware Version: F1512090500
        Memory Size: 64MB
Device Status
        Page Counter         : 101791 [01 8D 9F] #00
```

RAW data organized in segments:

```
#00   101791 = 00.0104.0001.ffffff.8d.ffffff.9f - page counter
#padEnd      = ffffffff
```

MFC-L2720DW - brInfoCoverage

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.18 (**brInfoCoverage**)

RAW: 00020529ffffffff

```
Stream length: 8 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: 00 02 05 29 FF FF FF FF                          ···)····
```

HTTP:

```
Device Status
        Page Counter         : 101791 [01 8D 9F]
        Drum Count           : 101791 [01 8D 9F]
        Average Coverage**** : 5.41%  [05 29] ( 5=0x05 integer , 41=0x29 decimal) #00
```

RAW data organized in segments:

```
#00   5 41 = 00.02.0529 - Coverage
#padEnd    = ffffffff
```

MFC-L2720DW - brInfoMaintenance

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.8 (**brInfoMaintenance**)

RAW:

```
6301040000000311010400001ffffff8dffffff9f41010400000000310104000000016f0104000009ffffffc4fff
fff8101040000001effffff8601040000000affffffff

Stream length: 68 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: 63 01 04 00 00 00 03 11 01 04 00 01 FF FF FF 8D c···············
00000010: FF FF FF 9F 41 01 04 00 00 00 00 31 01 04 00 00 ····A·····1····
00000020: 00 01 6F 01 04 00 00 09 FF FF FF C4 FF FF FF 81 ··o·············
00000030: 01 04 00 00 00 1E FF FF FF 86 01 04 00 00 00 0A ················
00000040: FF FF FF FF                                     ····
```

HTTP:

```
Remaining Life
        Drum Unit*            : 0pages  [00 00]
        (% of Life Remaining) : (0.00%) [00 00] #41
```

This printer returns via http not much data ☹ .

RAW data organized in segments:

```
#63       3 = 63.0104.00000003                  - ? long shoot: might be drum status (1-ok, 2-ending, 3-used, need replace)
#11  101791 = 11.0104.0001.ffffff.8d.ffffff.9f  - Drum page count (^o^)
#41       0 = 41.0104.00000000                  - Remaining life: drum (in 0.01%)
#31       1 = 31.0104.00000001                  - ?
#6F    2500 = 6f.0104.000009.ffffff.c4.ffffff   - ? - Remaining life: toner (0.01%)
#81      30 = 81.0104.0000001e.ffffff           - ? - Remaining life: toner (1%)
#86      10 = 86.0104.0000000a                  - ? - Remaining life: toner - min warn level?
#padEnd     = ffffffff
```

MFC-L2720DW - brInfoNextCare

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.11 **(brInfoNextCare)**

RAW: ffffff82010400000000ffffffff

```
Stream length: 14 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: FF FF FF 82 01 04 00 00 00 00 FF FF FF FF       ..............
```

HTTP:

```
Remaining Life
        Drum Unit*   : 0pages  [00 00] #82
```

RAW data organized in segments:

```
#pad     = ffffff
#82    0 = 82.0104.00000000 – Remaining life: drum unit (in pages)
#padEnd  = ffffffff
```

MFC-L2720DW - brInfoReplaceCount

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.20 **(brInfoReplaceCount)**

RAW: ffffff820100ffffffa0012fffffffff

```
Stream length: 16 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: FF FF FF 82 01 00 FF FF FF A0 01 2F FF FF FF FF ···········/····
```

HTTP:

```
Replace Count
       Toner     : 47 [2F] #A0
       Drum Unit : 0  [00] #82
```

RAW data organized in segments:

```
#pad    = ffffff
#82   0 = 82.01.00.ffffff – drum replace count
#A0  47 = a0.01.2f        - toner replace count
#padEnd = ffffffff
```

MFC-L2720DW - brInfoJamCount

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.21 **(brInfoJamCount)**

RAW: 0102000221020013220200112302000025020 01bffffffa10400000026ffffffff

```
Stream length: 33 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: 01 02 00 02 21 02 00 13 22 02 00 11 23 02 00 00 ····!···"···#···
00000010: 25 02 00 1B FF FF FF A1 04 00 00 00 26 FF FF FF %···········&···
00000020: FF                                              ·
```

HTTP:

```
Total Paper Jams : 38 [00 26] #A1
        Jam Tray 1   : 2  [00 02] #01
        Jam Inside   : 19 [00 13] #21
        Jam Rear     : 17 [00 11] #22
        Jam 2-sided  : 0  [00 00] #23
Total Paper Jams (ADF)*** : 27 [00 1B] #27
```

RAW data organized in segments:

```
#01   2 = 01.02.0002        - Jam count: Tray 1
#21  19 = 21.02.0013        - Jam count: inside
#22  17 = 22.02.0011        - Jam count: rear
#23   0 = 23.02.0000        - Jam count: duplex unit
#25  27 = 25.02.001b.ffffff - Jam count: ADF
#A1  38 = a1.04.00000026    - Total paper jam count
#padEnd = ffffffff
```

HL-L5100DN

This is a newest printer that I have (just bought it) so there is not much in counters values so for most I'll identify IDs names looking on others printers.

HL-L5100DN - brInfoCounter

OID: `1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.10` (**brInfoCounter**)

RAW: `000104000000090601040000000 6ffffffff`

```
Stream length: 18 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: 00 01 04 00 00 00 09 06 01 04 00 00 00 06 FF FF ..............
00000010: FF FF                                          ..
```

HTTP:

```
Node Information
        Model Name: Brother HL-L5100DN series
        Main Firmware Version: 1.15
        Sub1 Firmware Version: 1.07
        Memory Size: 256MB
Device Status
        Page Counter        : 9      [00 09] #00
Total Pages Printed
        Total           : 9pages [00 09]
          2-sided Print : 6      [00 06] #06
```

RAW data organized in segments:

```
#00   9 = 00.0104.00000009 – Total page counter
#06   6 = 06.0104.00000006 – Duplex unit page count
#padEnd = ffffffff
```

HL-L5100DN - brInfoCoverage

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.18 (**brInfoCoverage**)

RAW: 00020231ffffffff

```
Stream length: 8 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: 00 02 02 31 FF FF FF FF                          ···1····
```

HTTP:

```
Device Status
        Average Coverage****: 2.49%  [02 31] #00 (2=0x02 integer, 49=0x31 decimal)
```

RAW data organized in segments:

```
#00   2 31 = 00.02.0231 - Average Coverage [0x02=integer, 0x31=decimal]
#padEnd    = ffffffff
```

Value at MSB byte contains integer part of number (0-100), LSB byte contains decimal part (.00 - .99) .

HL-L5100DN - brInfoMaintenance

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.8 (**brInfoMaintenance**)

RAW:

```
6301040000000111010400000025410104000027103101040000000016f0104000026ffffffacffffff810104000
00064ffffff8601040000000f67010400000000016b0104000027105401040000000166010400000001350104000
00016a0104000027106c0104000027106d010400002710ffffffff
```

```
Stream length: 118 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: 63 01 04 00 00 00 01 11 01 04 00 00 00 25 41 01 c·············%A·
00000010: 04 00 00 27 10 31 01 04 00 00 00 01 6F 01 04 00 ···'·1·····o···
00000020: 00 26 FF FF FF AC FF FF FF 81 01 04 00 00 00 64 ·&·············d
00000030: FF FF FF 86 01 04 00 00 00 0F 67 01 04 00 00 00 ··········g·····
00000040: 01 6B 01 04 00 00 27 10 54 01 04 00 00 00 01 66 ·k····'·T·····f
00000050: 01 04 00 00 00 01 35 01 04 00 00 00 01 6A 01 04 ·····5·····j··
00000060: 00 00 27 10 6C 01 04 00 00 27 10 6D 01 04 00 00 ··'·l····'·m····
00000070: 27 10 FF FF FF FF                               '·····
```

HTTP:

```
Remaining Life
        Drum Unit*: 100%        [27 10] #41
        Fuser Unit: 199991pages [03 0D 37] (% of Life Remaining: 100% [27 10] #6B)
        Laser Unit: 199991pages [03 0D 37] (% of Life Remaining: 100% [27 10] #6A)
        Paper Feeding Kit MP: 49999pages [C3 4F]    (% of Life Remaining: 100% [27 10] #6C)
        Paper Feeding Kit 1: 99995pages  [01 86 9B] (% of Life Remaining: 100% [27 10] #6D)
        Toner**: 100% [27 10] /or/ [64] #81
```

RAW data organized in segments:

```
#63      1 = 63.0104.00000001                - ? drum status (1-ok, 2-ending soon, 3-need replace) ?
#11     37 = 11.0104.00000025                - Drum unit page count
#41  10000 = 41.0104.00002710                - Remaining life: drum unit (0.01%)
#31      1 = 31.0104.00000001                - ? like drum – toner status ?
#6F   9900 = 6f.0104.000026.ffffff.ac.ffffff - ? Remaining life: toner (in 0.01%)
#81    100 = 81.0104.00000064.ffffff         - Remaining life: toner (in 1%)
#86     15 = 86.0104.0000000f                - ? toner minimum warn level ?
#67      1 = 67.0104.00000001                - ?
#6B  10000 = 6b.0104.00002710                - Remaining life: Fuser unit (int 0.01%) /or/ laser?
#54      1 = 54.0104.00000001                - ?
#66      1 = 66.0104.00000001                - ?
#35      1 = 35.0104.00000001                - ?
#6A  10000 = 6a.0104.00002710                - Remaining life: Laser unit (int 0.01%) /or/ fuser?
#6C  10000 = 6c.0104.00002710                - Remaining life: Paper Feeding Kit MP (int 0.01%)
#6D  10000 = 6d.0104.00002710                - Remaining life: Paper Feeding Kit 1 (int 0.01%)
#padEnd = ffffffff
```

HL-L5100DN - brInfoNextCare

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.11 **(brInfoNextCare)**

RAW:

```
ffffff8201040000ffffffc32bffffff89010400030d3773010400030d37ffffff8601040000ffffffc34f77010
40001ffffff86ffffff9bffffffff

Stream length: 60 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: FF FF FF 82 01 04 00 00 FF FF FF C3 2B FF FF FF ............+...
00000010: 89 01 04 00 03 0D 37 73 01 04 00 03 0D 37 FF FF ......7s.....7..
00000020: FF 86 01 04 00 00 FF FF FF C3 4F 77 01 04 00 01 ..........Ow....
00000030: FF FF FF 86 FF FF FF 9B FF FF FF FF            ............
```

HTTP:

```
Remaining Life
        Drum Unit*: 100%        [27 10]
        Fuser Unit: 199991pages [03 0D 37] #89
        Laser Unit: 199991pages [03 0D 37] #73
        Paper Feeding Kit MP: 49999pages [C3 4F] #86
        Paper Feeding Kit 1: 99995pages  [01 86 9B] #77
        Toner**: 100% [27 10]
```

RAW data organized in segments:

```
#pad        = ffffff
#82   49963 = 82.0104.0000.ffffff.c32b.ffffff  - Remaining life: Drum unit (pages)
#89  199991 = 89.0104.00030d37                 - Remaining life: fuser unit /or/ laser unit (pages)
#73  199991 = 73.0104.00030d37.ffffff          - Remaining life: laser unit /or/ fuser unit (pages)
#86   49999 = 86.0104.0000.ffffff.c34f         - Remaining life: PF Kit MP (pages)
#77   99995 = 77.0104.0001.ffffff.86.ffffff.9b - Remaining life: PF Kit 1 (pages)
#padEnd     = ffffffff
```

HL-L5100DN - brInfoReplaceCount

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.20 **(brInfoReplaceCount)**

RAW: ffffff820100ffffffa00100ffffff890100730100ffffff8601007701 00ffffffff

```
Stream length: 34 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: FF FF FF 82 01 00 FF FF FF A0 01 00 FF FF FF 89 ................
00000010: 01 00 73 01 00 FF FF FF 86 01 00 77 01 00 FF FF ..s........w....
00000020: FF FF                                           ..
```

HTTP:

```
Replace Count
        Toner               : 0 [00] #A0
        Drum Unit           : 0 [00] #82
        Fuser Unit          : 0 [00] #89
        Laser Unit          : 0 [00] #73
        Paper Feeding Kit MP : 0 [00] #86
        Paper Feeding Kit 1  : 0 [00] #77
```

RAW data organized in segments:

```
#pad    = ffffff
#82   0 = 82.01.00.ffffff - Replace count: drum unit
#a0   0 = a0.01.00.ffffff - Replace count: toner
#89   0 = 89.01.00        - Replace count: fuser unit /or/ laser unit
#73   0 = 73.01.00.ffffff - Replace count: laser unit /or/ fuser unit
#86   0 = 86.01.00        - Replace count: PF Kit MP
#77   0 = 77.01.00        - Replace count: PF Kit 1
#padEnd = ffffffff
```

HL-L5100DN - brInfoJamCount

OID: 1.3.6.1.4.1.2435.2.3.9.4.2.1.5.5.21 **(brInfoJamCount)**

RAW: 0002000001020000210200002202000023020000ffffffa10400000000ffffffff

```
Stream length: 33 bytes
Table width: 16 bytes
ADDRESS : 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789ABCDEF
--------  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- ----------------
00000000: 00 02 00 00 01 02 00 00 21 02 00 00 22 02 00 00 ........!...".....
00000010: 23 02 00 00 FF FF FF A1 04 00 00 00 00 FF FF FF #...............
00000020: FF                                              .
```

HTTP:

```
Total Paper Jams : 0 [00 00 00 00] #A0
        Jam MP Tray  : 0 [00 00] #00
        Jam Tray 1   : 0 [00 00] #01
        Jam Inside   : 0 [00 00] #21
        Jam Rear     : 0 [00 00] #22
        Jam 2-sided  : 0 [00 00] #23
```

RAW data organized in segments:

```
#00   0 = 00.02.0000        - Jam count: MP tray
#01   0 = 01.02.0000        - Jam count: Tray 1
#21   0 = 21.02.0000        - Jam count: inside
#22   0 = 22.02.0000        - Jam count: rear
#23   0 = 23.02.0000.ffffff - Jam count: duplex unit
#A1   0 = a1.04.00000000    - Total jam count
#padEnd = ffffffff
```

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