

# FIRMWARE ALERT! HP LATEST RELEASES

By Joe Cachia and the Technical Staff at UniNet

UniNet believes the best way to communicate OEM firmware status is by means of our newsletter. This is the first in a series of monthly articles covering significant firmware changes. Each month we will focus on a different OEM; the OEM featured in this month's article is HP. These articles will also be available on our UniNet website.

Our industry continues to experience "OEM Firmware Updates" and the (at times) disastrous results on replacement chip functionality.

Firmware and updating of electronic devices have been around for decades, so why is this becoming a more frequent issue? First, "Firmware" is simply the embedded software that manages printer functions. The availability of lower cost devices to provide high processing speed and memory has allowed the electronics to handle increased machine functionality without increasing mechanical complexity (cost).

Second, like any software, updates are needed to address 'bugs,' improve functionality, security, or in some cases, to block aftermarket replacements.

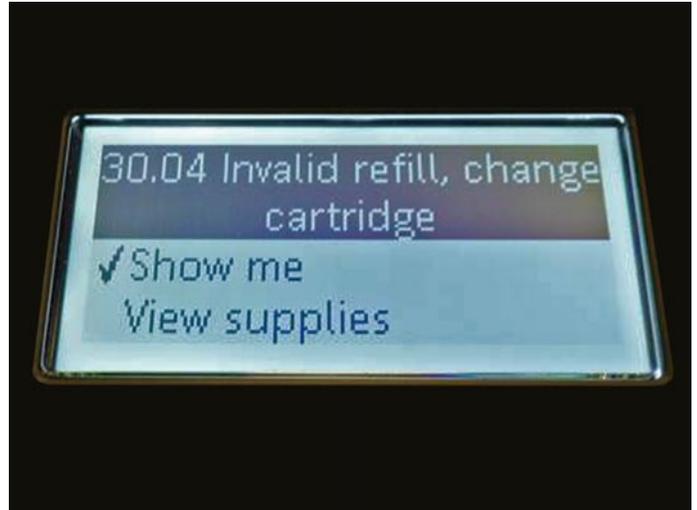
Third, unless the firmware is specifically targeting printer-to-chip communication, it is unlikely that firmware updates will compromise chip functionality.

A typical printer is a very complex device. There is a lot going on during printer function as a wide array of items are controlled and/or monitored, especially considering the increased resolution, speeds, color capability, multi-functions, toner usage, and so on.

Only a small portion of the firmware actually deals with the communication between printer and chip. The basic function of the chip is to present the cartridge (on which the chip is mounted) information to the printer, and if correct, printing is allowed. This includes information such as...

- The correct cartridge info (Part #)
- Correct region
- Cartridge new or used
- If used, the page-count and page coverage
- Toner remaining in the cartridge (based on information stored by the printer)

The printer also uses the chip as a "notepad" to store relevant information about the cartridge (usually toner level information). The fact that firmware updates have resulted in failures of replacement chips that previously worked fine has made many concerned, and rightfully so. It is incumbent on aftermarket chip manufacturers to more thoroughly evaluate OEM chip functionality and potential and gain insight on the impact of potential future updates. This is not a simple task, and may cause both increased development times and product cost.



In addition, the use of higher-level encryption and proprietary chip architecture further increases development time and product cost.

Historically, limited connectivity of machines made firmware updating a tedious manual task. Over time, improvements in network connections have reduced the attention level required, but ultimately the choice of upgrading was made by administrators. Today, that option is rapidly disappearing.

With the available infrastructure of the Internet, many connected machines will now automatically update as needed. One example is HP's Firmware Update Utility; once installed and configured, it will routinely poll and install firmware updates for the particular machine.

OEM websites for firmware downloads may or may not provide details of what issues the firmware update addresses. That makes it difficult to predict which firmware update contains an embedded time bomb to block aftermarket chips.

A typical example is the Lexmark MS/MX series. When introduced, the machines did not care or store the serial number on any chip used on an installed cartridge. Aftermarket chip manufacturers were quick to market with replacement chips and non-unique serialization.

Through a firmware update, machines now query the chip for serial number, and allow printing ONLY if, the serial number had not been previously seen by that machine. The aftermarket has approached this in a number of ways, and the market is still awaiting the final solution.

OEMs manage firmware updates differently. While many make these updates readily available on their respective website, some do not provide access, or only provide access when a confirmed account holder/user of the products.

Constant monitoring of firmware update availability is critical. UniNet routinely reviews OEM sites for updates on key products by machine and by region. Of these major OEMs, firmware update monitoring is top priority...

- Lexmark - has historic track record of firmware updates impacting chip functionality
- Dell - usually follows Lexmark, but more regionalization has increased complexity
- Samsung - increasing use of firmware updates to block replacement chips
- Xerox - firmware updates may or may not include blocking replacement chips
- HP - firmware updates rarely impact aftermarket chips, but functionality issues of "Genuine HP" vs "Non HP" are being addressed via updates as they are encountered.

Note that there is an issue with "Non-Genuine HP" type aftermarket chips not functioning correctly on the HP P2035 and P2055 when using Web Jet Administrator.

HP has acknowledged this issue, and released the Firmware Update Utility for these machines in December 2013. If you have an account running WebJetAdmin using these machines, downloading this update is critical for full functionality.

UniNet will continue monitoring firmware updates and routinely check current product for issues. This is no simple task, but we believe the effort is justified in reducing customer issues.



The featured OEM firmware listing in this month's article is for HP.

As shown in the list below, HP has released a number of firmware updates since July 1, 2014, and as of October 10, 2014...

<b>MACHINE SERIES</b>	<b>REGION</b>	<b>FIRMWARE</b>	<b>DATE RELEASED</b>
HP Color LaserJet Pro MFP M177	WW	20140921	1-Oct-2014
HP CP2020	WW	20140702	11-Aug-2014
HP CM1415	WW	20140616	6-Aug-2014
HP OfficeJet Pro 8100	WW	TSP1FN1416AR	4-Aug-2014
HP CP5525	WW	2302963_436070	31-Jul-2014
HP LaserJet Enterprise M4555	WW	2302963_436064	31-Jul-2014
HP LaserJet Enterprise 500 Color M551	WW	2302963_436081	31-Jul-2014
HP LaserJet Pro 300	WW	20140718	31-Jul-2014
HP CM 4540	WW	2302963_436067	31-Jul-2014
HP Enterprise 700 color MFP M775	WW	2302963_436079	31-Jul-2014
HP LaserJet Enterprise 700	WW	2302963_436079	31-Jul-2014
HP LaserJet Enterprise M806	WW	2302963_436075	31-Jul-2014
HP LaserJet Enterprise M855	WW	2302963_436076	31-Jul-2014
HP CP4525	WW	07.164.1	25-Jul-2014
HP CP6015	WW	04.203.1	25-Jul-2014
HP P4015	WW	04.213.1	23-Jul-2014
HP P4014	WW	04.213.1	23-Jul-2014
HP P3015	WW	07.186.1	23-Jul-2014
HP CM6040	WW	52.256.1	23-Jul-2014
HP CP3525	WW	06.183.1	22-Jul-2014
HP M5035	WW	48.306.1	22-Jul-2014
HP LaserJet Pro MFP M127	WW	20140129	10-Jul-2014
HP LaserJet Pro M435 MFP	WW	20140626	7-Jul-2014