



# FlexNet Publisher 2015 Service Pack 4 (11.13.1.4) Release Notes

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# Overview

This service pack FlexNet Publisher Service Pack 4 (11.13.1.4) is intended to correct only the problems that are described in the release notes and only applies to the supported platforms indicated below. See [Supported Platforms](#) section below for more details.

## Resolved Issues in FlexNet Publisher 2015 Service Pack 4 (11.13.1.4)

### Visual Studio 2015 support

FlexNet Publisher applications can now be compiled and linked with Visual Studio 2015. This requires compiling and linking a new kit-supplied source file, `lm_redir_std.c`. The kit-supplied `kit` makefile and `makefile.act` demonstrate this. (FNP-13964)

### FLEXLM\_TIMEOUT environment variable changes.

FLEXLM\_TIMEOUT is a Windows-only environment variable, which sets the timeout value (in microseconds) a FlexEnabled client application uses when attempting to connect to a license server. Previously, the default value was 100000 (0.1 seconds). Now, the default value is 3000000 (3 seconds), with minimum value 200000 (0.2 seconds) and maximum 20000000 (20 seconds).

This change resolves an issue where timeout errors could inappropriately occur because of network latency between the client and the server (FNP-13879). Note that the time to report a failure when attempting to connect to an invalid host from a Windows client is also governed by the FLEXLM\_TIMEOUT value. (FNP-13879).

## Resolved Issues from FlexNet Publisher 2015 Service Pack 3 (11.13.1.3)

### Imgrd instability under high volume of connections

In the event that Imgrd encountered a connection with a file descriptor number greater than the maximum that can be accommodated in an `fd_set` buffer, an Imgrd core dump previously occurred. The `LM_SERVER_HIGHEST_FD` environment variable can be set by the license administrator (on the server) to limit the maximum file descriptor number that can be assigned to a Imgrd connection. From 11.13.1.3, `LM_SERVER_HIGHEST_FD` defaults to the maximum supported file descriptor number - 1024 on Linux, 4096 on Windows. Windows has a higher maximum because file descriptor numbers are allocated to Windows sockets in multiples of 4.

Now, when a client connects using a file descriptor > LM\_SERVER\_HIGHEST\_FD, it will receive an error such as -16 (LM\_CANTREAD) or -95 (LM\_NOT\_THIS\_HOST) and the message “warning: Maximum connections to the server has reached. Please disconnect some clients from the server” will be written to the server log (FNP-11100).

In some cases, the Imgrd process may be overwhelmed by client connections before the file descriptor allocation is exceeded: symptoms of this occurring are when clients receive -15 (LM\_CANTCONNECT) errors and an accumulation of sockets on the server in ESTABLISHED or CLOSE\_WAIT states while client volume is high. This is an indication that the server hardware resources are not handling the client load: in such cases one option to reduce load on the server is to decrease the LM\_SERVER\_HIGHEST\_FD value (FNP-13992).

## Minimizing Microsoft Attack Surface Analyser errors with customized Imadmin installations on Windows

A new Imadmin command line parameter **cacheDir** is introduced to define the destination directory for cache files (FNP-11412). This is intended to be used with the pre-existing **configDir**, **logDir**, and **uploadDir** parameters so that custom Windows Imadmin installers can specify these runtime folders in a ProgramData location. These runtime folders are by default created as subfolders of the location where Imadmin.exe is installed. Since applications are typically installed in a Windows Program Files location, this can lead to User-modify privilege being enabled on ProgramFiles subfolders (Imadmin runs with LocalUser privilege when running as a service), which is a security issue detected by Microsoft Attack Surface Analyser. By moving these runtime folders to a ProgramData location, Windows best-practice is followed, which removes Microsoft Attack Surface Analyser errors such as “The folder 'C:\Program Files (x86)\Imadmin' contains folders with ACLs that allow tampering by multiple non-administrator accounts” (FNP-9695).

## Inappropriate “Updating DACL Failed” Imtools message

A license server serving trusted storage features requires start permission for the FlexNet Licensing Service, which Imtools attempts to introduce by modifying the FlexNet Licensing Service permissions when installing the license server as a service. The “Updating DACL Failed” message can occur if the FlexNet Licensing Service is not present when this attempt is made.

Previously, this message was inappropriately displayed when the license server does not use trusted storage. Now, an attempt to update FlexNet Licensing Service permissions is made only if the new “Trusted Storage in Use” checkbox is checked (FNP-11526).

## SHA256 now used in certificate signatures on Windows

Windows binaries (including Imadmin.exe) signed with the Flexera Software LLC certificate now use a SHA256 digest, previously SHA1(FNP-11621).

## Simplified example backoffice for xml activation licensing models

Responsegen.exe (which loads responsegen.dll, a component used in Flexera-supplied backoffices) has previously been supplied as an example test utility, but without source code.

Now, a simplified ResponseGenApi.c example is provided in the.\examples\activation\responsegen folder. This example demonstrates the APIs exposed by responsegen.dll to process xml transaction requests from activation utilities such as appcompranutil (FNP-11362).

## Delay when starting license server as a service

Previously, when using `lmtools` or `installs` to install `lmgrd` as a service, or `lmadmin -installService`, an inappropriate dependency on the WMI Performance adapter service (`wmiApSrv`) was created. This dependency occasionally resulted in startup delays of the license server service. The `wmiApSrv` dependency has now been removed (FNP-11535).

## Checkout performance and NAT-translation improvements for FlexNet Publisher clients

From FlexNet Publisher 11.12.0, FlexNet Publisher clients have by default resolved their own hostname against a DNS server to both IPv4 and IPv6 address, and send these IP addresses to the license server as part of the checkout request. This behavior can be disabled by setting the environment variable `FPN_IP_ENV=1` on the client system, whereupon the client's IP address will instead be obtained from the socket connection at the license server. There are two scenarios where `FPN_IP_ENV=1` is desirable:

- If the license server wishes to use a NAT-translated IP address for the client
- if the resolution of a client's hostname (by the client) is slow, this can block checkout performance. This can occur in some network configurations, for example in '.local' domains.

As a result of customer feedback, FlexNet Publisher clients now have '`FPN_IP_ENV=1`' behavior by default (FNP-11609). Setting `FPN_IP_ENV=0` will cause clients to resolve their own hostname against a DNS server to both IPv4 and IPv6 address.

Producers are unlikely to have to advise their customers to set `FPN_IP_ENV=0`, provided only one IP variation is consistently used across client and server configurations, such as in the options file. The default IP variation (refer `FPN_IP_PRIORITY`) is IPv4.

## Java exception on using native hostids

Previously, In a Java application when the client with a native hostid tries to get the feature details of the uncounted licenses the application exits with an exception, this issue is now resolved and no exception is seen when you try to get the feature details of uncounted licenses (FNP-11350).

## Client side Memory leak

This leak occurred on subsequent calls of `LM_A_LICENSE_DEFAULT` to provide the server path (FNP-11336).

## Java client hangs indefinitely

When a license file has multiple feature lines the `getFeatureDetails` API used to hang indefinitely due to not identifying the correct number of feature lines (FNP-11099).

## Preptool failure on OS X

When using `WxWidgets` on OS X, a "Negative extent overlap encountered" preptool failure could occur when prepping the producer's application. This has now been resolved (FNP-11476).

## LM\_A\_INTERNET\_OVERRIDE issue

Earlier, when the attribute LM\_A\_INTERNET\_OVERRIDE was set in client application, the client was able to checkout an extra license. Now LM\_A\_INTERNET\_OVERRIDE restricts the user from performing an extra checkout (FNP-10714).

## Overdraft usage-reporting updates

In 11.13.1.1, an overdraft usage reporting white paper and Windows-based example archives were made available for the first time. The overdraft usage reporting example is based on the new vendor daemon callbacks for OVERDRAFT licenses, as described in the 11.13.1.1 release notes.

In 11.13.1.3 some improvements in the supplied makefile (makefile.ou) are delivered in fnpoverdraftusage-i86\_n3-11.13.1.3.zip and fnpoverdraftusage-x64\_n6-11.13.1.3.zip example archives. These improvements mean the updated example archives must be used with the 11.13.1.3 FlexNet Publisher kits, which have matching changes in the kit-provided makefiles (FNP-11361). The overdraft usage reporting white paper (FNP\_WP Overdraft Reporting.pdf) has been updated to reflect the minor changes that result when building the example.

## Overdraft license resolved issue

The client handle was not reported correctly in `ts_inod_callback` when a borrowed overdraft feature was expired or returned is resolved (FNP-11387).

# Resolved Issues from FlexNet Publisher 2015 Security Update 1 (11.13.1.2)

## Buffer overrun vulnerability in lmgrd and vendor daemon

Please refer to the following customer article for details:

[https://flexeracommunity.force.com/customer/articles/en\\_US/ISSUE/Two-security-vulnerabilities-remediated-in-FlexNet-Publisher/](https://flexeracommunity.force.com/customer/articles/en_US/ISSUE/Two-security-vulnerabilities-remediated-in-FlexNet-Publisher/)

Flexera Software recommends producers take this opportunity to upgrade their license servers to FlexNet Publisher 2015 Security Update 1 (11.13.1.2), where the vulnerability has been addressed (FNP-11413).

## Checkout Performance delay

During the first checkout against a new job, virtualization checks are performed in FlexNet Publisher. In FlexNet Publisher 2015 Security Update 1 (11.13.1.2) Windows kits, virtualization checks take approximately 0.5 seconds, compared to 1.5 seconds in FlexNet Publisher 2015 Service Pack 1 (11.13.1.1) and 0.3 seconds in FlexNet Publisher 2015 (11.13.1.0). This additional technique was optimized in FlexNet Publisher 2015 Security Update 1 (11.13.1.2) (FNP-11434, FNP-11324, FNP-11306).

## Signing Imadmin Windows Installer

Earlier the FlexNet Publisher 2015 SP 1 (11.13.1.1) Imadmin installer was not code-signed. The FlexNet Publisher 2015 Security Update 1 (11.13.1.2) Imadmin installer is correctly code-signed with the Flexera Software certificate (FNP-11451).



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**Note** • FlexNet Publisher 2015 Security Update 1 (11.13.1.2) Imadmin installers package includes FlexNet Publisher 2015 Service Pack 1 (11.13.1.1) Imadmin - there are no functional changes to Imadmin in FlexNet Publisher 2015 Security Update 1 (11.13.1.2).

## Vendor Daemon Client Connection Limits

As a consequence of the high-client-volume Imgrd stability fix delivered in FlexNet Publisher 2015 Service Pack 1 (11.13.1.1) (FNP-11100), connections to the vendor daemon (VD) were mistakenly limited as well as connections to the Imgrd. This manifested as new client connections to a Windows VD being rejected at about the 2000th client, and at about the 8000th client for a non-Windows VD. In such cases, the message “**Highest file descriptor allowed (8196) has been reached**” was written to the server log. This has been corrected in FlexNet Publisher 2015 Security Update 1 (11.13.1.2), and VD client connection limits are now returned to their FlexNet Publisher 2015 (11.13.1.0) levels (FNP-11401 and FNP-11421).

## Windows UMN2 for Broadcom Ethernet adapters

Models of Broadcom adapters whose “PNP Device Id” is prefixed with the Broadcom driver string “B06BDRV” would not previously generate a UMN2 on Windows. Such adapters will now generate a UMN2 (FNP-11202).

# Resolved Issues from FlexNet Publisher 2015 Service Pack 1 (11.13.1.1)

## General Issues

### Report log: IP address was logged as lost for borrow checkouts after server restart

After switching the report log (using Imnewlog) and restarting the server, a borrow user’s IP address may be logged as lost in the report log, this issue is resolved and the client IP address is displayed (FNP-10713).

### Linux stability issues related to loading of system libraries (RTLD\_DEEPBIND flag)

In order to resolve stability issues related to loading of system libraries such as libhal and libsmbios on Linux, FlexNet Publisher LSB binaries are now built with the RTLD\_DEEPBIND linker flag (FNP-11294).

## Typo in displaying Amazon family name

In FlexNet Publisher 2015 (11.13.1) release when you run `lmvminfo -l` on to test the Amazon EC2 platform, the Family field displayed Family = AMAZO, this is now been corrected (FNP-11161).

## Package lines having same component names had an issue during upgrade

In the prior release, when we upgrade two different packages having same component names in a license file, the license server displayed an error "Prior INCREMENT line for UPGRADE (xyz:5.0->5.0201) has no licenses". This issue is now fixed (FNP-11149).

## Client crash with empty LM\_LICENSE\_FILE

The client application built with FlexNet Publisher used to crash when `LM_LICENSE_FILE` contained an empty string (FNP-10429).

## Helgrind -detected race condition resolved

A thread race condition on Unix platforms, detected by the helgrind tool, has been resolved (FNP-10975).

## lmstat displayed incorrect count of reserved licenses after lmreread

Previously, when a `lmreread` occurred after reserving licenses, `lmstat` sometimes displayed incorrect count of reserved licenses of a particular component (FNP-2875).

## Reported buffer overrun in FlexNet Publisher Windows activation library (libFNP.dll)

Buffer overrun issues in deployed `libFNP.dll` libraries were analyzed through a crash dump obtained from a producer's Windows Error Reporting (WER) account. The buffer overrun was traced to inappropriate usage of a `sscanf` function, which has now been replaced (FNP-10810).

## Three server failover issue

In Flexnet Publisher 11.13.0 on failover a client that uses license files instead of the recommended `port@host` for license server paths, experienced a heartbeat failure. This client-side issue is now resolved. (FNP-11311).

## Slower checkout due to multiple DNS lookups

Some scenarios where multiple DNS lookups were inappropriately occurring, have been optimized (FNP-11141).

# Imadmin Issues

## SSL server vulnerability

The cipher suites configured for Imadmin allowed man-in-the-middle attack, that is certain cipher suites that do not require server authentication were supported by https client. Now by disabling the NULL Authentication ciphers, the client always authenticates the server certificate, this in turn provides the security against man-in-the-middle attack (FNP-10946).

## SSL protocols supported in Imadmin

Imadmin now supports "TLSv1 and TLSv2 "SSL protocols (FNP-10941).

## Imadmin installer import files issue

Importing files from previous Installation option in Imadmin installer throws an error "Couldn't copy vendor daemon. <pathToPreviousInstallation>" due to vendor daemon path non availability. The vendor daemon path is now updated in Server.xml file and no error is seen during import installation (FNP-10871).

# Virtualization detection updates for 11.13.1.1

## VMware ESXi 6.0

VMware ESXi 6.0 is now supported (FNP-10908).

## VirtualBox 5.0.4

FlexNet Publisher now supports detection of VirtualBox 5.0.4 (VirtualBox 4.3 previously). However, a bug in the Virtual Box 5.0.0 and 5.0.2 Hypervisor means that `Imvminfo` returns 'physical' from a Windows guest, and 'QEMU' from a Linux guest (FNE-4650, FNE-4651). On VirtualBox 5.0.4, `Imvminfo` returns the expected 'VIRTUALBOX'. Therefore, Flexera strongly recommends installing the latest patch for VirtualBox 5.0.

## Parallels Desktop 10

FlexNet Publisher now supports detection of virtual environments with Parallels 10. However, a bug in the detection mechanism from Linux guests means that `Imvminfo` detects Parallels 10 as 'QEMU' (FNP-11271). Parallels 9 is correctly detected as 'PARALLELS'.



# Known Issues in FlexNet Publisher 2015 (11.13.1.2, 11.13.1.3, and 11.13.1.4)

## **Windows QEMU detection limitation**

Some Windows 10 guests running on QEMU hypervisors may fail to detect a virtual environment (FNP-11386).

## **Imadmin installer Java issue**

When installing Imadmin on Mac OS X 10.11 machine, Imadmin Installer might show an error message “no Compatible Java 1.5\* is available” even if JRE 1.8 is already installed.

As a workaround it is recommended to install the legacy JRE 1.6 version on the Mac OS X 10.11 machine, before running the Imadmin installer (FNP- 11370).

## **Imgrd license server as a Windows service fails to start**

In FlexNet Publisher 2015 (11.13.1), a change was made to run Windows license server services with LocalService privilege instead of LocalSystem privilege, following the least-privilege security best practice. One inappropriate consequence is that a Imgrd Windows service, as installed by installs.exe or Imtools.exe, may not start. This is because a LocalService service does not by default have sufficient privilege to write the server debug log to (a subdirectory of) Windows Program Files or Users directories (FNP-11460, FNP-11446, FNP-11431, FNP-11393).

Flexera therefore recommends following Windows best-practice for writing application data by specifying debug log and report log locations within a subfolder of %SystemDrive%\ProgramData\. LocalService services do by default have sufficient privilege to write to ProgramData (sub)directories (FNP-11500).

# Supported Platforms

This service pack release delivers FlexNet Publisher archives for: i86\_n3 and x64\_n6 it is a Windows only Service pack. For more details, see FlexNet Publisher 2015 (11.13.1) release notes. Refer to url: <http://www.flexerasoftware.com/support/eol/flexnet-publisher-end-of-life.htm> for the latest information on supported platforms.

## Platform Notes

- FlexNet Publisher 11.13.1.3 Imadmin is bundled in 11.13.1.4 Kits.
- FlexNet Publisher 11.13.1.3 has been tested against Apple OS X 10.11 and Windows 10 (FNP-11094).
- On some recent Linux updates, such as SUSE Enterprise Linux 12, the LSB component is not offered as part of the supported distribution. Components in FlexNet Publisher, such as Imgrd, require the LSB-loader. If this is not present, Imgrd will fail to run with a 'file not found' error (FNP-11338, FNP-11353).

As a workaround specify a soft link to the native loader. The following symlinks have been verified on SUSE Enterprise Linux 12:

32-bit Linux

```
sudo bash -c "if [ ! -e /lib/ld-lsb.so.3 ]; then ln -s ld-linux.so.2 /lib/ld-lsb.so.3; fi"
```

64-bit Linux

```
sudo bash -c "if [ ! -e /lib64/ld-lsb-x86-64.so.3 ]; then ln -s ld-linux-x86-64.so.2 /lib64/ld-lsb-x86-64.so.3; fi"
```

From 11.13.1.3, the `install_fnp.sh` script will issue a warning if LSB is not detected on the host. Additionally, this script supports a new **-nolsb** parameter, which sets up the symlinks from the LSB loader to the native loader, allowing components such as Imgrd to run (FNP-11524).

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