



FlexNet Publisher 2015 Security Update 1 (11.13.1.2) Release Notes

November 2015

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Overview

This security update addresses the security vulnerability described in FNP-11413, and has internal version FlexNet Publisher (11.13.1.2). It additionally resolves four bugs discovered in Flexnet Publisher 2015 Service Pack 1 (11.13.1.1), and is therefore cumulative to FlexNet Publisher Service Pack1 (11.13.1.1). All supported platforms are delivered for this security update. See [Supported Platforms](#) section below for more details.

Resolved Issues in FlexNet Publisher 2015 Security Update 1 (11.13.1.2)

Buffer overrun vulnerability in Imgrd 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/

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).



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).

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).

New Features and Enhancements in FlexNet Publisher 2015 Service Pack 1 (11.13.1.1)

New vendor daemon callback for OVERDRAFT licenses

The vendor daemon overdraft checkout callback *ls_outod_callback*, delivered as an experimental feature in FlexNet Publisher 2015 (11.13.1.0), is fully supported on FlexNet Publisher licensing components Certificate based and Trusted Storage based served licensing models.

Additionally, a new overdraft checkin callback, *ls_inod_callback*, is added in FlexNet Publisher 2015 Service Pack 1 (11.13.1.1). This callback will be called by the vendor daemon whenever an OVERDRAFT license is checked out or checked in, and operates similarly to the existing checkout and checkin callbacks (*ls_outfilter* and *ls_infilter*).



Note • An *ls_co_od.c* example is provided in the advanced examples folder.

In FlexNet Publisher 2015 (11.13.1.0) release three experimental server-side attributes were added exclusively in *ls_outod_callback*. Amongst the three server side attributes, *LS_ATTR_NLIC_INUSE* and *LS_ATTR_NLIC_REG* have been removed, and *LS_ATTR_NLIC_OD* is retained but with modified behavior: *LS_ATTR_NLIC_OD* now returns the total number of licenses consumed by the current checkout.

In addition, the following server attributes only used in overdraft callbacks are added in FlexNet Publisher 2015 Service Pack 1 (11.13.1.1)

- *LS_ATTR_OD_REQUESTS* gives the total number of overdraft users
- *LS_ATTR_TOTAL_NLIC_OD_INUSE* gives total overdraft license consumed

Limitations of *ls_outod_callback* and *ls_inod_callback* include:

- Not supported with *PACKAGE*. In this case, the total overdraft count is not correctly maintained (FNP-11261, FNP-11235).
- Not supported with *DUP_GROUP*. Currently, when using *DUP_GROUP* with OVERDRAFT, the overdraft callbacks won't get called in some permutations (FNP-11328).

- Not supported when reservations are used (through RESERVE keyword in options file (FNP-10852)). When RESERVE is used, `ls_outod_callback` may not be called when overdraft licenses are consumed.
- MINIMUM keyword is currently not supported with OVERDRAFT, if used together, then overdraft consumption ignores the keyword (FNP-11002)
- The client handle is not reported correctly in `ls_inod_callback` when a borrowed overdraft feature expires or is returned (FNP-11231)

Overdraft license Resolved issues

1. Inappropriate calling of `ls_outod_callback` after reread when a license file is updated, or a new license file added to the server is resolved (FNP-10783).
2. Edge cases involving inappropriate consumption of an overdraft license by a client when a non-overdraft license is available is resolved (FNP-10772).
3. `ls_outod_callback` is currently supported for clients which perform activation borrow against the license server. It is only supported for concurrent licenses (FNP-10585).

Cloud and Virtualization Enhancements.

FlexNet Publisher now detects Azure (previously Hyper-V was detected) from supported Windows guests running in Azure environment.

Detection of Azure from within Linux guests will be implemented in a future release. Certificate applications are now fully supported on Azure environments. The VM_UUID HostID is recommended for certificate license servers.

Trusted Storage applications have experimental support on Azure in this service pack. A limitation with trusted storage on Azure is that a binding break will (inappropriately) occur when an Azure virtual machine is stopped, then started (as two separate operations) from the Azure console (FNP-11168).

Table 1 • LM_A_VM_FAMILY and LM_A_VM_NAME values for supported hypervisor

Hypervisor or cloud platform	Family	Name
Citrix XenServer	XEN	XEN
Amazon EC2	AMAZON	EC2
VMware ESXi	VMWARE	SERVER
VMware Workstation	VMWARE	DESKTOP
Microsoft Hyper-V	MICROSOFT	HYPER-V
Oracle VirtualBox	VIRTUALBOX	VIRTUALBOX
Parallels	PARALLELS	PARALLELS
QEMU-KVM	QEMU	QEMU-KVM

Hypervisor or cloud platform	Family	Name
Google Compute	GOOGLE	COMPUTE
AZURE	MICROSOFT	AZURE, previously HYPER-V

Determining if a trial ASR has previously been loaded

Previously, FlexNet Publisher did not offer the ability to check if a trial had already been loaded, other than by attempting to load the ASR and receiving the LM_TS_ASR_LOAD_ONCE error. It can be confusing for an end-user if the producer application offers a trial ASR and then tells the end-user that the trial ASR has already been consumed. It is better not to offer the trial ASR.

Consequently, **flxActCommonLicSpcCheckASR** and **flxActCommonLicSpcCheckASRFromBuffer** activation APIs have been added, and their use is demonstrated in the appactutil utility by means of the new *localcheck* option, an example of which is given (assuming 30day_acct.asr was loaded on 24 July 2015):

```
appactutil -localcheck ..\examples\ezcalc\30day_acct\30day_acct.asr
Checking ASR ..\examples\ezcalc\30day_acct\30day_acct.asr.
The ASR's trial (Id 3) was started on (ymd) 2015/07/24.
The fulfillment record created when the ASR was loaded exists.
```

For more details see header `FLXACTCOMMON.H` file and for details on sample source files see `appactutil.c` and `serveractutil.c` on how to use the functions.



Note • The start date in the above message is returned in UTC, not the time-zone of the machine. This can mean that it appears that the ASR is loaded a day earlier or later, depending on the time the ASR was loaded. This issue will be resolved in a future release (FNP-11340).

Resolved Issues in 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 `lmnewlog`) 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 -long` 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 `scanf` 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 Security Update 1 (11.13.1.2)

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).

VM_UUID not available from Linux Guests on Xen

In some cases, a Linux guest on Xen hypervisors will not generate a VM_UUID or VMID or UMN3. This will be resolved in a future service pack (FNP-11377).

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).

Slow checkouts on OS X systems with .local domains

A FlexNet Publisher client operating on an OS X system with .local suffix in the fully-qualified hostname may experience a delay of the order of several seconds when performing a checkout against a license server. This delay occurs when the client attempts to resolve its hostname to both IPv4 and IPv6 address against a DNS server. The issue has been present since FlexNet Publisher 2013 R2 (11.12.0) (FNP-11309, FNP-10541, FNP-11458).

As a workaround set the client-side environment variable **FNP_IP_ENV=1**. Doing this will prevent the client resolving its own hostname. However, care should be taken in setting **FNP_IP_ENV** if IP addresses are used in the options file: when **FNP_IP_ENV** is not set, the client sends both its IPv4 and IPv6 address to the server; but when **FNP_IP_ENV=1** is set, the server extracts the client IP address from the socket connection. By default, the server attempts to create an IPv4 socket (refer **FNP_IP_PRIORITY**), but failing

that will attempt creation of an IPv6 socket. Therefore, when setting `FNP_IP_ENV=1`, Flexera recommends using IPv4 addresses over IPv6 in the options file, and in served node-locked license files (FNP-11499)

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 can occur.

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 an Imgrd connection. A temporary change in FlexNet Publisher 2015 (11.13.1.2) release is that the maximum value that can be assigned to this environment variable, and the default, is 8192.

Now, when a client connects using a file descriptor $>$ `LM_SERVER_HIGHEST_FD`, it will receive a -95,378 error 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.

In a subsequent service pack, the algorithm for determining the maximum file descriptor value that can be used by Imgrd will be improved. The changes delivered in FlexNet Publisher 2015 (11.13.1.1) release will reduce the probability of a core dump but will not eliminate it.

It should be noted that conditions under which Imgrd can encounter this number of open file descriptors have not been reproduced by Flexera. Licensing clients are handed off efficiently by the Imgrd to the vendor daemon so that even under high volume situations, it is unusual for Imgrd to be responsible for more than a few dozen open file descriptors (FNP-11100).

Supported Platforms

This service pack release delivers FlexNet Publisher archives for: i86_n3, x64_n6, i86_lsb, x64_lsb, universal_mac10, universal_mac10_applelibc, sun4_u9, sun64_u9, x86_sol9, x64_sun10, ppc_u5, rs64_u5 and it64_hp11i. Lmadm installer updates are released only for Windows. 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 11.13.1.1 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 lmgrd, require the LSB-loader. If this is not present, lmgrd 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"
```

The 32-bit symlinks may additionally require installation of "glibc-devel-32bit".

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