

FlexNet Publisher 2021 (11.18.3) Release Notes

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Revision 00

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Enhancements

This release includes the following enhancement:

- [New Vendor Variable for Detecting Licenses with Clients During Network Disconnect](#)
- [Introduced a New Error Message for FlexNet Licensing Service](#)
- [Change in Detection Technique Under Azure Cloud Environment](#)

New Vendor Variable for Detecting Licenses with Clients During Network Disconnect

FlexNet Publisher has introduced a new vendor variable 'ls_server_override_client_tcp_timeout' in lsvendor.c to detect the checked out licenses by the license server after the client's TCP disconnects and reconnects.

This vendor variable is introduced to specify how long(in seconds) the license server waits since it received the last heartbeat before it determines that the client is disconnected and checks in all licenses associated with that client.

This option overrides the LM_A_TCP_TIMEOUT value set in the client application.

(FNP-18904)

Introduced a New Error Message for FlexNet Licensing Service

A new error message is introduced when FlexNet Licensing service is installed from remote machine. The error message is "Access has been denied to a remote service. To get access to remote service, login to machine locally and re-install the anchor service with -remote_installation option".

(FNP-24138)

Change in Detection Technique Under Azure Cloud Environment

Under Azure cloud environment, certain VM instances require elevated privileges to fetch VM_UUID. The detection technique has been changed to provide security, stability, and ease to use for standard users. It is in coherence with cloud provider solution to fetch instance uuid value. The new detection technique will generate different VM_UUID value. The FlexNet Publisher artifacts like license file and trusted storage may require modification to latest VM_UUID value.

(ECMC-343)

Security Updates

This release includes the following security updates:

- [Third Party Library Updates](#)

Third Party Library Updates

OpenLDAP

The OpenLDAP software has been upgraded from v2.4.45 to v2.5.7.

(FNP-25737)

Apache Server Upgrade

The Apache server has been upgraded from v2.4.48 to v2.4.51.

(FNP-26154)

Expat Library Upgrade

The Expat library has been upgraded from v2.2.9 to v2.4.1.

(FNP-25730)

OpenSSL Upgrade

OpenSSL has been upgraded from v1.1.1k to v1.1.1l.

(FNP-25729)

Crypto++ Upgrade

The Crypto++ has been upgraded from v5.4 to v8.5.

(FNP-25102)

Dongle Updates

This release includes the following dongle updates:

- The Safenet dongle drivers have been upgraded from v8.21 to v8.23.
(FNP-25846)

Platform Updates

This section lists platform updates for the following releases:

- [11.18.3 Updates](#)
- [11.18.2 Updates](#)
- [11.18.1 Updates](#)

- [11.18.0 Updates](#)

11.18.3 Updates

The 11.18.3 updates include the following:

- [Integrated Products and Tested Versions](#)
- [Windows OS](#)
- [macOS](#)

Integrated Products and Tested Versions

The following table lists the integrated products and tested versions for this release.

Product	Tested Version
FlexNet Operations	FlexNet Operations 2020.01 (20.1.0)
FlexNet Manager for Engineering Applications	FlexNet Manager for Engineering Applications 2020 R1 (15.11.0)
FlexNet Operations Cloud	FlexNet Operations Cloud 2021.11 (21.11.58)

Windows OS

Support for Windows Server 2022 OS

In this release, FlexNet Publisher supports Windows Server 2022 (x64_n6, i86_n3).

macOS

Support for macOS 12.0 beta Monterey.

In this release, FlexNet Publisher supports Universal2 kit for macOS 12.0 beta Monterey (x86_64, ARM64).

(FNP-25505)

11.18.2 Updates

The 11.18.2 updates include the following:

- [Integrated Products and Tested Versions](#)

Integrated Products and Tested Versions

The following table lists the integrated products and tested versions for this release.

Product	Tested Version
FlexNet Operations	FlexNet Operations 2021.07 (21.7.43)
FlexNet Manager for Engineering Applications	FlexNet Manager for Engineering Applications 2020 R1 (15.11.0)
FlexNet Operations Cloud	FlexNet Operations Cloud 2021 R1 (21.4.0)

11.18.1 Updates

The 11.18.1 updates include the following:

- [Integrated Products and Tested Versions](#)
- [macOS](#)

Integrated Products and Tested Versions

The following table lists the integrated products and tested versions for this release.

Product	Tested Version
FlexNet Operations	FlexNet Operations 2020 R1 (20.1.0)
FlexNet Manager for Engineering Applications	FlexNet Manager for Engineering Applications 2020 R1 (15.11.0)
FlexNet Operations Cloud	FlexNet Operations Cloud 2021 R1 (21.4.0)

macOS

Support for macOS 11.0 Big Sur

In this release, FlexNet Publisher supports Universal2 kit for macOS 11.0 Big Sur (x86_64 + ARM64).
(FNP-23847)

11.18.0 Updates

The 11.18.0 updates include the following:

- [Integrated Products and Tested Versions](#)

- [Windows](#)
- [macOS](#)

Integrated Products and Tested Versions

The following table lists the integrated products and tested versions for this release.

Product	Tested Version
FlexNet Operations	FlexNet Operations 2020 R1 (20.1.0)
FlexNet Manager for Engineering Applications	FlexNet Manager for Engineering Applications 2020 R1 (15.11.0)
FlexNet Operations Cloud	FlexNet Operations Cloud 2021 R1 (21.1.0)

Windows

Diagnostics Port Listener Issue

Diagnostics port listener is supported on Windows 10 on build 17093 and later on and not supported on Windows 7 and Windows 10 earlier than build 17093.

(FNP-23784)

macOS

End of Life for macOS/OS X Universal Kit (x86-32 + x64)

Starting with FlexNet Publisher 11.18.0, the product will not support Universal kit for macOS/OS X (x86-32 + x64). Customers can continue using x64_mac10 kits.

Support for macOS 11.0 Big Sur on Intel Architecture

In this release, FlexNet Publisher x64_mac10 kit supports macOS 11.0 Big Sur Intel architecture.

Resolved Issues

This release of the FlexNet Publisher Licensing Toolkit resolves the following issues. (Numbers in parentheses indicate the Flexera issue reference number as well as the Salesforce reference number, if applicable.)

- [Resolved Issue Specific to Trusted Storage-Based Licensing](#)
- [Resolved Issue Specific to Trusted Storage-Based Licensing](#)
- [Resolved Imadmin, Imgrd, Vendor daemon, and Utility Issue](#)

Resolved Issue between Client and License Server

Fix for Server Log Issue with async lc_vsend

There was no message printed in the server log when processing lc_vsend() messages asynchronously. This issue has been fixed.

(FNP-25453)

Resolved Issue Specific to Trusted Storage-Based Licensing

Fix for Access Violation Exception in Activation Library Component

On Windows, the prepped application under Application verifier had thrown the Access violation. The issue has been fixed now.

(FNP-25318)

Resolved Imadmin, Imgrd, Vendor daemon, and Utility Issue

Fix for Incorrect Imswitch Switch Logs

When License server was started with multiple vendor daemon setup, the Imswitch utility did not switch the logs correctly for each vendor daemon. This issue has been fixed.

(FNP-24391)

Unsuccessful License File Crypt with the Start Date 2028 and Later

The Imcrypt utility was unable to crypt the license file when the start date was set to post 2027. This issue has been fixed. The valid start year to crypt the license file has been changed from 2027 to 2038.

(FNP-23379)

Fix for Incorrect Imhostid Return with hyper-V Switch

The Imhostid did not return the correct mac address on a physical Windows 10 machine with hyper-V switch enabled. This issue has been fixed now.

(FNP-17294)

Fix for Incorrect License Count Post reread

In Trusted Storage environment, the license leakage was observed post server reread for count of licenses that were borrowed (activation) pre-reread. This issue had been observed when an additional checkout happened for the same license with a different user (other than borrowed license user). Now, a fix has been provided in FlexNet Publisher to prevent the TS license leakage post server reread.

(FNP-24865)

Resolved Issue Specific to Dongle Driver

Update on README File

The README document provided with the FLEXID9_Windows_v8_11_i686.zip in the release FlexNet Publisher 11.18.2 was empty. This issue has been fixed. Now, updated the README files with correct content.

(FNP-25806)

Known Issues

This release includes known issues in the following categories:

- [Known Dongle Issues](#)
- [Known Imadmin Issues](#)
- [Known Issues Specific to License File-Based Licensing](#)
- [Known Issues Specific to Trusted Storage-Based Licensing](#)
- [Known Java Issues](#)

Known Dongle Issues

Flexid10 Dongle Driver Issue

FLEXID10 dongles may not work correctly with the latest v6.50 driver on VMware hypervisors. This issue has been identified on both Windows and Linux platforms with a dongle connected using a USB passthrough on VMware ESXi and on VMware Workstation. The problem has been reported to Wibu. As a temporary workaround, use the previous version v6.32 driver on VMware hypervisors.

(FNP-17284, FNP-16819)

Wibu Dongle Driver Issue

An error occurs on SUSE 11 SP4 Linux machine while installing a new Wibu dongle driver (V6.50). The problem has been reported to Wibu. As a temporary workaround, use the previous version v6.40 driver.

(FNP-20298)

Dongles in Universal2 Kit

Dongles are not supported in the Universal2 Kit.

(FNP-24876)

Known Imadmin Issues

Lmadmin Silent Installer not Displaying Required Error Message

When a non-root user attempts to install lmadmin in the default location, the installer may hang.

(FNP-6942)

Known Issue between Client and License Server

Server Log Warning Message not Observed

In Windows, after the Server reaches more than 895-900 TCP connections, "Warning: Maximum connections to the server has reached. Please disconnect some clients from the server" message is not observed in the server log. This issue will be fixed in the subsequent FlexNet Publisher release.

(FNP-25878)

Known Issues Specific to License File-Based Licensing

Imdiag Displaying Incorrect Output when Multiple Vendors are Served by a Single License Server Manager

If multiple vendor daemons are served by a single license server manager (such as lmgrd), lmdiag shows an incorrect error message "No such feature exists" for features that are served by one of the valid daemons.

(FNP-19617; Salesforce case 01202287)

"MAX_CONNECTIONS" Option File Keyword

If a software publisher upgrades only lmgrd and vendor daemon to version 11.16.3 or above, but not the client, the error code that would be received by an older version (version < 11.16.3) client, when MAX_CONNECTIONS limit is exceeded is as follows:

"LM_BADCOMMAND" Error code: "-140" - "A bad command was found in a message".

(FNP-20537)

Known Issues Specific to Trusted Storage-Based Licensing

Borrow Activation to a Linux Client Causes a Crash

The **fixActBorrowActivate** function crashes when server trusted storage contains an INCREMENT line before a PACKAGE line. However, FlexNet Operations does not produce licenses in this configuration.

(FNP-10437; Salesforce case 00506917)

Error Observation in macOS Big Sur ARM Platform

While building the FNP universal2 kit on macOS Big Sur ARM platform, the following error has been observed:

dyld: Library not loaded: libresposegen.dylib

Referenced from: /Users/nightly/<user>/universal2/unchanged/universal2_mac11/publisher/./responsegenapi

Reason: unsafe use of relative <user> libresposegen.dylib in /Users/nightly/<user>/universal2/unchanged/universal2_mac11/publisher/./responsegenapi with restricted binary

Abort trap: 6 running the responsegenapi, the error has been observed. Suggesting to rebuild the utility with the makefile.act provided in the kit on ARM platform for macOS Big Sur machine.

When you get this error on running the responsegenapi, rebuild the responsegenapi executable using the makefile.act provided in the FlexNet Publisher kit.

(FNP-23847)

Known Java Issues

There are no known Java issues in the 11.18.3.0 release.

System Requirements

The System Requirements include the following:

- [Tested Platforms](#)
- [System Requirements for lmadmin](#)

Tested Platforms

The following sections describe the platforms tested with the FlexNet Publisher 2021 (11.18.3) Licensing Toolkits.

- [C/C++ Toolkits](#)
- [Java Toolkits](#)
- [Detailed Platform Information](#)
- [Toolkits That Support Prepped Trusted Configuration](#)
- [Virtualization](#)
- [Tested Cloud Environments](#)

A list of supported platforms can be found here:

<https://docs.revenera.com/eol/>

C/C++ Toolkits

The following platforms are tested. See the [Detailed Platform Information](#) section for more information about each platform.

Table 1 ▪ Tested Platforms—C/C++ Toolkits

Platform Type	Hardware Type	Operating System
AIX 32-bit	PowerPC	AIX 7.1 and 7.2
AIX 64-bit	PowerPC	AIX 7.1 and 7.2
HP-UX 64-bit	Intel Itanium	HP-UX B.11.31 U ia64
Linux 32-bit	x64	RHEL 8 RHEL 7 SLES 11 SP4 SLES 12 SP5
Linux 64-bit	x64	RHEL 7 and 8 SLES 11 SP4, * SLES 12 SP3, SLES 12 SP4, SLES 12 SP5, * SLES 15, SLES 15 SP1, SLES 15 SP2, and SLES 15 SP3 Ubuntu 16.04, 18.04, and 20.4
Linux 64-bit FNP-11496	ARMv8-A (AArch64)	RHEL 8 SLES 15
macOS/OS X 64-bit	x64	macOS 10.15 macOS 10.14 macOS 11.1 macOS 12 beta 2
macOS ARM 64-bit	ARM-64	macOS 11.4 macOS 12 beta 7
Microsoft Windows 32-bit	x86	Windows 10 Windows 7 SP1 ESU (Extended Security Updates) It is a best practice to run license servers on a server-based OS.

Table 1 ▪ Tested Platforms—C/C++ Toolkits

Platform Type	Hardware Type	Operating System
Microsoft Windows 32-bit	x64	Windows Server 2019
		Windows Server 2016
		Windows Server 2022
Microsoft Windows 64-bit	x64	Windows 10
		Windows 7 SP1 ESU (Extended Security Updates)
		Windows Server 2019
		Windows Server 2016
		Windows Server 2022
		It is a best practice to run license servers on a server-based OS.
Solaris 32-bit	SPARC 32-bit	Solaris 10 and 11
	x86	
Solaris 64-bit	SPARC 64-bit	Solaris 10 and 11
	x86-x64	



Note ▪ The asterisk (*) symbol indicates that the version of the operating system is supported and not tested in the current release.

Java Toolkits

The following platforms have been tested. See [Java Standard Edition](#) in [Detailed Platform Information](#) for more information about this platform.

Table 2 ▪ Tested Platforms—Java Toolkits

Platform Type	Hardware Type	Version
Oracle Java Development Kit	● Solaris x86	Java Standard Edition 1.8
	● Solaris x64	
	● Solaris SPARC 32-bit	Java Standard Edition 1.8 and 1.11
	● Solaris SPARC 64-bit	
	● Windows x86	
	● Windows x64	
	● Linux x86	
	● Linux x64	
	● macOS x64	

Detailed Platform Information

The following sections list the operating systems and their associated hardware platforms tested with FlexNet Publisher 2021 (11.18.3). Each platform entry contains the following information:

- **Platform name**—The name that identifies this platform when used with the PLATFORMS keyword in a license file.
- **Package identifier**—The name of the toolkit package on Flexera’s download site.
- **Tested compiler**—The compiler and version with which this package was tested. Choose a compiler for your development and build environment that is compatible with the one listed.
- **Notes**—Additional platform-specific notes that are useful for developing your FlexEnabled product.
- **Security functionality**—Denotes the level of security functionality your toolkit supports. This information is useful when you implement trusted storage-based licensing in your product. See *Programming Reference for Trusted Storage-Based Licensing* for details.

Click a link to access platform details:

- [Microsoft Windows 32-bit](#)
- [Microsoft Windows 64-bit](#)
- [Linux 32-bit](#)
- [Linux 64-bit](#)
- [ARMv8-A \(AArch64\)](#)

- macOS/OS X 64-bit
- macOS ARM 64-bit
- Solaris 32-bit
- Solaris 64-bit
- AIX 32-bit
- AIX 64-bit
- Java Standard Edition
- HP-UX 64-bit

Microsoft Windows 32-bit

The following table lists information about the Microsoft Windows 32-bit systems tested with the FlexNet Publisher Licensing Toolkit:

Item	Description
Platform Name	i86_n
Package Identifier	i86_n3
Tested Compiler	<ul style="list-style-type: none"> ● Visual Studio 2019 (16.8.3) ● Visual Studio 2017 (15.9.36) ● Visual Studio 2015 Update 3 ● Visual Studio 2013 Update 5

Item	Description
Notes	<ul style="list-style-type: none"> ● lmadmin is supported in this toolkit. ● Multiple Ethernet hostids are supported. ● Short-code transactions are supported. ● Prepped Trusted Configuration is supported. ● Tested virtual machine platforms include: <ul style="list-style-type: none"> VMware Workstation 16.1.0 VMware ESXi 6.5 and 6.7 Microsoft Windows Server 2019 Hyper-V Microsoft Windows 10 Hyper-V Citrix XenServer 8.0 Oracle Virtual Box 6.1 Parallels Desktop 15.1.2 for macOS 10.15.4 everRun 7.8 QEMU-KVM (Host OS: CentOS 8) <ul style="list-style-type: none"> ● Hypervisor: qemu-kvm-ev-4.2.0 ● Hypervisor Services: libvirt-daemon-kvm-6.0.0 ● Virtual Machine Manager: vmm v2.2.1
Toolkit Functionality	Licensing based on license files or trusted storage.
Security Functionality	Support for tamper-resistant applications. The toolkit is labeled as <i>standard</i> .

Microsoft Windows 64-bit

The following table lists information about the Microsoft Windows 64-bit systems tested with the FlexNet Publisher Licensing Toolkit:

Item	Description
Platform Name	x64_n
Package Identifier	x64_n6
Tested Compiler	<ul style="list-style-type: none"> ● Visual Studio 2019 (16.8.3) ● Visual Studio 2017 (15.9.36) ● Visual Studio 2015 Update 3 ● Visual Studio 2013 Update 5

Item	Description
Notes	<ul style="list-style-type: none"> ● 1madmin is supported using its 64-bit binary. While the 32-bit 1madmin binary (contained in the x86_n3 toolkit) continues to be supported on 64-bit systems, Flexera recommends using the 64-bit binary on 64-bit systems. FNP-18383 ● Multiple Ethernet hostids are supported. ● Short-code transactions are supported. ● Prepped Trusted Configuration is supported. ● The 1mtools utility cannot interact with the license server manager (1mgrd) when 1mgrd is run as a service. ● Tested virtual machine platforms include: <ul style="list-style-type: none"> VMware Workstation 16.1.0 VMware ESXi 6.5 and 6.7 Microsoft Windows Server 2019 Hyper-V Microsoft Windows 10 Hyper-V Citrix XenServer 8.0 Oracle Virtual Box 6.1 Parallels Desktop 15.1.2 for macOS 10.15.4 everRun 7.8 QEMU-KVM (Host OS: CentOS 8) <ul style="list-style-type: none"> ● Hypervisor: qemu-kvm-ev-4.2.0 ● Hypervisor Services: libvirt-daemon-kvm-6.0.0 ● Virtual Machine Manager: vmm v2.2.1
Toolkit Functionality	Licensing based on license files or trusted storage.
Security Functionality	Support for tamper-resistant applications. The toolkit is labeled as <i>standard</i> .

Linux 32-bit

The following table lists information about the Linux 32-bit systems tested with the FlexNet Publisher Licensing Toolkit:

Item	Description
Platform Name	i86_lsb
Package Identifier	i86_lsb

Item	Description
Tested Compiler	For x86: <ul style="list-style-type: none"> gcc 8.2.1 (RHEL 8) gcc 4.8.5 (RHEL 7) gcc 4.3.4 (SLES 11 SP4)
Notes	<ul style="list-style-type: none"> ladmin is supported using its 32-bit binary. Multiple Ethernet hostids are supported. Short-code transactions are supported. Prepped Trusted Configuration is supported. Tested virtual machine platforms include: <ul style="list-style-type: none"> VMware ESXi 6.5 and 6.7 VMware Workstation 16.1.0 Microsoft Windows Server 2019 Hyper-V Microsoft Windows 10 Hyper-V Citrix XenServer 8.0 Oracle Virtual Box 6.1 Parallels Desktop 15.1.2 for macOS 10.15.4 everRun 7.8 QEMU-KVM (Host OS: CentOS 8) <ul style="list-style-type: none"> Hypervisor: qemu-kvm-ev-4.2.0 Hypervisor Services: libvirt-daemon-kvm-6.0.0 Virtual Machine Manager: vmm v2.2.1
Toolkit Functionality	Licensing based on license files or trusted storage.
Security Functionality	Support for tamper-resistant applications. The toolkit is labeled as <i>standard</i> .

Linux 64-bit

The following table lists information about the Linux 64-bit systems tested with the FlexNet Publisher Licensing Toolkit:

Item	Description
Platform Name	x64_lsb
Package Identifier	x64_lsb

Item	Description
Tested Compiler	For x64: <ul style="list-style-type: none"> ● gcc 4.8.5 (RHEL 7) ● gcc 8.2.1 (RHEL 8) ● gcc 7.3.1 (SLES 15) ● gcc 7.4.1 (SLES 15 SP1) ● gcc 7.5.0 (SLES 15 SP2) ● gcc 7.5.0 (SLES 15 SP3) ● gcc 4.8.5 (SLES 12 SP4) ● gcc 4.3.4 (SLES 11 SP4) ● gcc 7.3.0 (Ubuntu 18.04) ● gcc 5.4.0 (Ubuntu 16.04) ● gcc 9.3.0 (Ubuntu 20.04)
Notes	<ul style="list-style-type: none"> ● lmadm is supported using its 64-bit binary. ● Multiple Ethernet hostids are supported. ● Short-code transactions are supported. ● Prepped Trusted Configuration is supported (x64_lsb only). ● No dongle support on SLES 15 ● Tested virtual machine platforms include: <ul style="list-style-type: none"> VMware ESXi 6.5 and 6.7 VMware Workstation 16.1.0 Microsoft Windows Server 2019 Hyper-V Microsoft Windows 10 Hyper-V Citrix XenServer 8.0 Oracle Virtual Box 6.1 Parallels Desktop 15.1.2 for macOS 10.15.4 everRun 7.8 QEMU-KVM (Host OS: CentOS 8) <ul style="list-style-type: none"> ● Hypervisor: qemu-kvm-ev-4.2.0 ● Hypervisor Services: libvirt-daemon-kvm-6.0.0 ● Virtual Machine Manager: vmm v2.2.1
Toolkit Functionality	Licensing based on license files or trusted storage.

Item	Description
Security Functionality	Support for tamper-resistant applications. The toolkit is labeled as <i>standard</i> .

ARMv8-A (AArch64)

The following table lists information about the ARMv8-A (AArch64) systems tested with the FlexNet Publisher Licensing Toolkit: FNP-11496

Item	Description
Platform Name	arm64_linux
Package Identifier	arm64_linux
Tested Compiler	<ul style="list-style-type: none"> ● gcc 8.2.1 (RHEL 8) ● gcc 7.3.1 (SLES 15)
Notes	<ul style="list-style-type: none"> ● lmadm is not supported in this toolkit ● No VM detection or VMID hostid support ● No dongle support ● No trusted storage support
Toolkit Functionality	Licensing based on license files.
Security Functionality	No support for tamper-resistant applications. The toolkit is labeled as <i>notr</i> .

macOS/OS X 64-bit

The following table lists information about the macOS/OS 64-bit system tested with the FlexNet Publisher Licensing Toolkit:

Item	Description
Platform Name	<ul style="list-style-type: none"> ● x64_mac
Package Identifier	<ul style="list-style-type: none"> ● x64_mac10

Item	Description
Tested Compiler	<ul style="list-style-type: none"> ● Xcode 12.3 ● Xcode 11.0 ● Xcode 10.3 ● Apple clang version 12.0.0 (clang-1200.0.32.28) ● Apple clang version 11.0.0 (clang-1100.0.33.5) ● Apple LLVM version 10.0.1 (clang-1001.0.46.4)
Notes	<ul style="list-style-type: none"> ● FNP-18383/FNP-17125 Multiple Ethernet hostids are not supported. ● Short-code transactions are supported. ● Prepped Trusted Configuration is supported. ● For building requirements, see Requirements for Building the macOS/OS X Licensing Toolkit.
Toolkit Functionality	Licensing based on license files or trusted storage.
Security Functionality	Support for tamper-resistant applications. The toolkit is labeled as <i>standard</i> .

Requirements for Building the macOS/OS X Licensing Toolkit

When building the FlexNet Publisher Licensing Toolkit on macOS/OS X platforms, use an appropriate Apple development environment:

- For macOS 10.15, use Xcode 12.3
- For macOS 10.14, use Xcode 10.3
- For macOS 11.1, use Xcode 12.4
- For macOS 12.0 beta, use Xcode 12.5.1

The supplied makefiles build a universal Licensing Toolkit that can be used to produce FlexEnabled applications of the following types (all contained within a single FAT binary):

- 64-bit Intel—Runs on OS X 10.14 Intel 64-bit platforms

Required macOS/OS X SDKs

An SDK appropriate to the macOS/OS X version must be available on the machine where you are building the Licensing Toolkit:

- For macOS 10.15, use `xcode-select --print-path` to obtain the correct path and choose 10.15 SDK path.
- For macOS 10.14, use `xcode-select --print-path` to obtain the correct path and choose 10.14 SDK path.

macOS ARM 64-bit

The following table lists information about the macOS ARM64-bit system tested with the FlexNet Publisher Licensing Toolkit:

Item	Description
Platform Name	<ul style="list-style-type: none">universal2_mac
Package Identifier	<ul style="list-style-type: none">universal2_mac11
Tested Compiler	<ul style="list-style-type: none">Xcode 12.5Apple clang version 12.0.5 (clang-1205.0.22.11)
Notes	<ul style="list-style-type: none">Prepped Trusted Configuration is supported.For building requirements, see Requirements for Building the macOS/OS X Licensing Toolkit.
Toolkit Functionality	Licensing based on license files or trusted storage.
Security Functionality	Support for tamper-resistant applications.

Requirements for Building the macOS ARM64 Licensing Toolkit

When building the FlexNet Publisher Licensing Toolkit on macOS ARM64 platform, use an appropriate Apple development environment:

- For macOS 11.2, use Xcode 12.5
- For macOS 11.4, use Xcode 12.5
- For macOS 12.0 beta, use Xcode 12.5.1

Required macOS ARM64 SDKs

An SDK appropriate to the macOS ARM64 version must be available on the machine where you are building the Licensing Toolkit:

- For macOS 11.2, use `xcode-select --print-path` to obtain the correct path and choose 11.2 SDK path.
- For macOS 11.4, use `xcode-select --print-path` to obtain the correct path and choose 11.4 SDK path.
- For macOS 12.0 beta, use `xcode-select --print-path` to obtain the correct path and choose 12.0 SDK path.

Solaris 32-bit

The following table lists information about the Solaris 32-bit systems tested with the FlexNet Publisher Licensing Toolkit:

Item	Description
Platform Name	<ul style="list-style-type: none">● x86_sol (on x86)● sun4_u (on SPARC 32-bit)
Package Identifier	<ul style="list-style-type: none">● x86_sol10 (on x86)● sun4_u10 (on SPARC 32-bit)
Tested Compiler	For x86: <ul style="list-style-type: none">● cc (Sun C) 5.11● cc (Sun C) 5.15 For SPARC 32-bit: <ul style="list-style-type: none">● cc (Sun C) 5.14● cc (Sun C) 5.15
Notes	<ul style="list-style-type: none">● lmadm.in is supported in this toolkit.● Synchronous I/O multiplexing, via select, is supported for up to 65,535 file descriptors.● The number of system semaphore arrays can become exhausted.● Shared objects might not run when compiled with gcc on SPARC 32-bit.● Multiple Ethernet hostids are not supported.● Prepped Trusted Configuration is supported.
Toolkit Functionality	Licensing based on license files or trusted storage.
Security Functionality	Support for tamper-resistant applications. The toolkit is labeled as <i>standard</i> .

Solaris 64-bit

The following table lists information about the Solaris 64-bit systems tested with the FlexNet Publisher Licensing Toolkit:

Item	Description
Platform Name	<ul style="list-style-type: none">x64_sun (on x64)sun64_u (on SPARC 64-bit)
Package Identifier	<ul style="list-style-type: none">x64_sun10 (on x64)sun64_u10 (on SPARC 64-bit)
Tested Compiler	For x64: <ul style="list-style-type: none">cc (Sun C) 5.11cc (Sun C) 5.15 For SPARC 64-bit: <ul style="list-style-type: none">cc (Sun C) 5.14cc (Sun C) 5.15
Notes	<ul style="list-style-type: none">ladmin is supported using its 64-bit binary. While the 32-bit ladmin binary (contained in the x86_sun and sun64_u toolkits) continues to be supported on 64-bit systems, Flexera recommends using the 64-bit binary on 64-bit systems. FNP-18383/FNP-17125Shared objects might not run when compiled with gcc on SPARC 64-bit.Multiple Ethernet hostids are not supported.Prepped Trusted Configuration is supported.
Toolkit Functionality	Licensing based on license files or trusted storage.
Security Functionality	Support for tamper-resistant applications. The toolkit is labeled as <i>standard</i> .

AIX 32-bit

The following table lists information about the AIX 32-bit systems tested with the FlexNet Publisher Licensing Toolkit:

Item	Description
Platform Name	ppc_u
Package Identifier	ppc_u5 (on PowerPC™)

Item	Description
Tested Compiler	PowerPC cc (IBM XLC): 11.1 (AIX 7.1) and 13.1.3 (AIX 7.2)
Notes	<ul style="list-style-type: none"> ● <code>ladmin</code> is supported in this toolkit. ● The AIX FlexNet Publisher client libraries are PIC by default; therefore, only one version of these libraries is provided in the toolkit. ● Java SDK is not supported.
Toolkit Functionality	Licensing based on license files.
Security Functionality	No support for tamper-resistant applications. The toolkit is labeled as <i>notr</i> .

AIX 64-bit

The following table lists information about the AIX 64-bit systems tested with the FlexNet Publisher Licensing Toolkit:

Item	Description
Platform Name	rs64_u
Package Identifier	rs64_u5 (on PowerPC™)
Tested Compiler	PowerPC cc (IBM XLC): 11.1 (AIX 7.1) and 13.1.3 (AIX 7.2)
Notes	<ul style="list-style-type: none"> ● <code>ladmin</code> is supported using its 64-bit binary. While the 32-bit <code>ladmin</code> binary (contained in the <code>ppc_u</code> toolkit) continues to be supported on 64-bit systems, Flexera recommends using the 64-bit binary on 64-bit systems. FNP-18383/FNP-17125 ● You must use <code>ar -X64</code> and <code>strip -X64</code> on this platform. ● The AIX FlexNet Publisher client libraries are PIC by default; therefore only one version of these libraries is provided in the toolkit. ● Java SDK is not supported.
Toolkit Functionality	Licensing based on license files.
Security Functionality	No support for tamper-resistant applications. The toolkit is labeled as <i>notr</i> .

Java Standard Edition

The following table lists information about the Java Standard Edition systems tested with the FlexNet Publisher Licensing Toolkit:

Item	Description
Platform Name	java
Package Identifier	Not applicable
Tested Compiler	<ul style="list-style-type: none">● JDK 8● JDK 11 (JDK 11 is not supported on Solaris x86 and x64)● OpenJDK 16 (Warnings are observed during installation and uninstallation of Imadmin installer on Windows as mentioned in FNP-22382) and in macOS Imadmin installer will not work as mentioned in FNP-24247
Notes	<ul style="list-style-type: none">● Implements the FlexNet Licensing for Java client library only.● Requires a C development environment.● Requires tamper-resistant licenses (TRL) to be enabled.
Toolkit Functionality	Licensing based on license files or trusted storage.
Security Functionality	No support for tamper-resistant applications. The toolkit is labeled as <i>notr</i> .

HP-UX 64-bit

The following table lists information about the HP-UX 64-bit systems tested with the FlexNet Publisher Licensing Toolkit:

Item	Description
Platform Name	it64_hp (on Intel Itanium)
Package Identifier	it64_hp11i (on Intel Itanium)
Tested Compiler	Intel Itanium HP C/aC++ B3910B A.06.12

Item	Description
Notes	<ul style="list-style-type: none"> • lmadm has not been tested in this toolkit. • On Intel Itanium, use the lhostid utility to determine the hostid. This returns the machine identification and is equivalent to the identification returned by the HP_UX command <code>getconf CS_PARTITION_IDENT</code>. For example: <pre>>lhostid >The FlexNet Licensing host ID of this machine is "ID_STRING=9c788319-db72-d411-af62-0060b05e4c05"</pre> Older methods of obtaining the hostid that return the Ethernet address are still supported, but may fail on some systems. The older methods include: <pre>>uname -i (returns decimal hostid) >lhostid -long (returns hexadecimal hostid)</pre> • Multi-threaded licensing libraries are available on Intel Itanium.
Toolkit Functionality	Licensing based on license files.

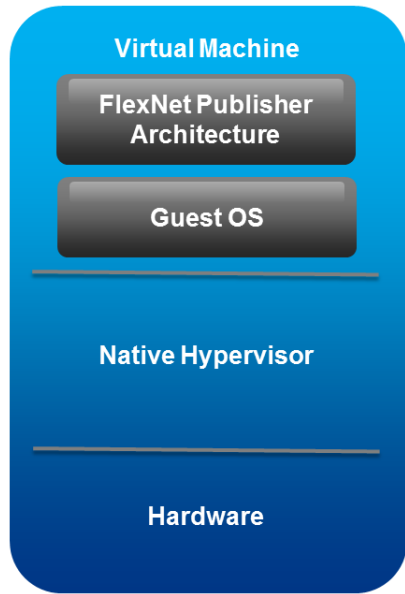
Toolkits That Support Prepped Trusted Configuration

Toolkit platforms that support prepped Trusted Configuration (and therefore server-side local trial ASRs) include the following:

- i86_lsb (32-bit Linux)
- x64_lsb (64-bit Linux)
- i86_n3 (32-bit Windows)
- x64_n6 (64-bit Windows)
- sun4_u10 (32-bit Solaris SPARC)
- sun64_u10 (64-bit Solaris SPARC)
- x86_sol10 (32-bit Solaris Intel)
- x64_sun10 (64-bit Solaris Intel)
- x64_mac10 (Universal macOS)
- universal2_mac11 (Universal macOS)

Virtualization

The following picture illustrates how the FlexNet licensing server or a FlexEnabled application operates within a Virtualization stack. The table below the picture lists the Virtualization stacks that have been tested with FlexNet Publisher.



Use the following table to determine the tested Virtualization stacks.

Table 3 - Tested Virtualization Stacks

FlexNet Publisher Architecture	Guest OS	Hypervisor
i86_n, x64_n	Windows 7 SP1 ESU	VMware ESXi 6.5 and 6.7 VMware Workstation 16.1.0 Oracle VirtualBox 6.1
	Windows 10	VMware ESXi 6.5 and 6.7 Citrix XenServer 8.0 VMware Workstation 16.1.0 Oracle Virtual Box 6.1 QEMU-KVM PARALLELS everRun 7.8
i86_n, x64_n	Windows Server 2016	everRun 7.8

Table 3 - Tested Virtualization Stacks

FlexNet Publisher Architecture	Guest OS	Hypervisor
i86_n, x64_n	Windows 10	Microsoft Hyper-V from Windows Server 2019
	Windows 7 SP1 ESU	Microsoft Hyper-V from Windows 10 Pro
	Windows Server 2019	
	Windows Server 2016	VMware ESXi 6.5 and 6.7
	Windows Server 2019	Citrix XenServer 8.0
		QEMU-KVM
		PARALLELS
		everRun 7.8
	Windows Server 2022	VMware
		QEMU-KVM
	everRun 7.8	
i86_lsb	RHEL 7, and 8	VMware ESXi 6.5 and 6.7
	SLES 11 SP4	VMware Workstation 16.1.0
	SLES 15 SP3	Citrix XenServer 8.0
		QEMU-KVM
		PARALLELS
		Microsoft Hyper-V from Windows Server 2019
		Microsoft Hyper-V from Windows 10 Pro
		Oracle Virtual Box 6.1
x64_lsb	RHEL 7, and 8	VMware ESXi 6.5 and 6.7
	SLES 11 SP4, * SLES 12 SP3, SLES 12 SP4, * SLES 15, SLES 15 SP1, SLES 15 SP2, and SLES 15 SP3	VMware Workstation 16.1.0
		Citrix XenServer 8.0
		PARALLELS
		Microsoft Hyper-V from Windows 10 Pro
		Oracle Virtual Box 6.1
i86_lsb,x64_lsb	RHEL 8	everRun 7.8
		QEMU-KVM

Table 3 - Tested Virtualization Stacks

FlexNet Publisher Architecture	Guest OS	Hypervisor
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Note

- Supported hostids in guest operating systems are ETHER (server and client) and, for all hypervisors other than Hyper-V, VM_UUID (server only). See the white paper, “Understanding Virtualization Features in FlexNet Publisher”, for more information.
- It is a best practice to run license servers on a server-based OS.
- For Windows and Linux certificate applications, the FlexNet Licensing Service needs to be installed for VM_UUID hostid to be extracted.
- The asterisk (*) symbol indicates that the version of the operating system is supported and not tested in the current release.

Tested Cloud Environments

Use the following table to determine guest operating systems and hostids that have been tested with FlexNet Publisher in the specified cloud environment.

Table 4 - Tested Cloud Environments

FlexNet Publisher Architecture	Tested OS	Cloud Platform	Host ID
i86_n, x64_n	• Windows Server 2016	Google Cloud	License servers:
	• Windows 10	Microsoft Azure	VM_UUID FlexEnabled clients: ETHER
i86_n, x64_n	• Windows Server 2016	Amazon EC2	License servers:
	• Windows Server 2019		VM UUID (previously AMZN_IID) AMZN_EIP FlexEnabled clients: AMZN_IID ETHER

Table 4 - Tested Cloud Environments

FlexNet Publisher Architecture	Tested OS	Cloud Platform	Host ID
i86_Isb, x64_Isb	● RHEL 7	Google Cloud	License servers:
	● SLES 11 SP4	Microsoft Azure	VM_UUID FlexEnabled clients: AMZN_IID ETHER
i86_Isb, x64_Isb	● RHEL 7 and 8	Amazon EC2	License servers:
	● SLES 11 SP4 and SUSE 15		AMZN_EIP or VM_UUID FlexEnabled clients: AMZN_IID ETHER



Note -

- Google Cloud, Amazon EC2 and Microsoft Azure can all use VM_UUID. VM_UUID is equivalent to AMZN_IID on EC2, Google Instance ID on Google and SMBIOS UUID on Azure
- AMZN_IID is superseded by VM_UUID for server-line hostid, but unlike VM_UUID is supported for feature-line hostid.
- For Windows and Linux certificate applications, the FlexNet Licensing Service needs to be installed for cloud hostids (VM_UUID, AMZN_EIP, AMZN_IID) to be extracted.

System Requirements for Imadmin

The following sections describe tested platforms and requirements for Imadmin:

- [Tested Platforms](#)
- [Additional System Requirements](#)
- [Tested Browsers](#)



Note - Imadmin installers are no longer packaged within FlexNet Publisher kit archives, and must be downloaded separately.

Tested Platforms

lmadmin has been tested on the following platforms.

Table 5 • Tested lmadmin Platforms

Platform Architecture	Processor Type	Operating System
AIX 32-bit	PowerPC	AIX 7.1 and 7.2
AIX 64-bit	PowerPC	AIX 7.1 and 7.2
Linux 32-bit	x64	RHEL 7 and 8 SLES 11 SP4
Linux 64-bit	x64	RHEL 7 and 8 SLES 11 SP4, * SLES 12 SP3, SLES 12 SP4, * SLES 15, SLES 15 SP1, SLES 15 SP2, and SLES 15 SP3 Ubuntu 16.04, 18.04, and 20.4
macOS/OS X 64-bit	x64	macOS 10.15 macOS 10.14 macOS 11.1 macOS 12.0 beta
macOS ARM 64-bit	ARM-64	macOS 11.2 macOS 11.4 macOS 12.0 beta
Microsoft Windows 32-bit	x86	Windows 10 Windows 7 SP1 ESU It is a best practice to run license servers on a server-based OS.
Microsoft Windows 32-bit	x64	Windows Server 2019 Windows Server 2016 Windows Server 2022

Table 5 - Tested lmadmin Platforms

Platform Architecture	Processor Type	Operating System
Microsoft Windows 64-bit	x64	Windows 10
		Windows 7 SP1 ESU
		Windows Server 2019
		Windows Server 2016
		Windows Server 2022
It is a best practice to run license servers on a server-based OS.		
Solaris 32-bit	SPARC 32-bit	Solaris 10 and 11
	x86	
Solaris 64-bit	SPARC 64-bit	Solaris 10 and 11
	x86-x64	



Note -

- *The FlexNet Publisher Licensing Toolkits for 64-bit platforms supply 64-bit lmadmin binaries. Flexera recommends their use on 64-bit platforms. Separate 32-bit lmadmin installers and binary archives are also available and can be used on 64-bit platforms if necessary. FNP-18383*
- *The asterisk (*) symbol indicates that the version of the operating system is supported and not tested in the current release.*

Additional System Requirements

lmadmin has these additional requirements:

- To use lmadmin on Windows platforms, the relevant Microsoft Visual C++ 2013 Redistributable Package must be installed.
- The lmadmin installer requires that JRE 1.6 or later (for macOS/OS X: JRE 1.7 or later) is installed. If the JRE is not already present on the machine, it must be installed separately, because it is not bundled with the lmadmin installer.

Tested Browsers

lmadmin is tested on the following Web browsers:

- **Red Hat Linux**—Mozilla Firefox 46.x, Google Chrome 87.x
- **Windows**—Microsoft Internet Explorer 11, Microsoft Edge
- **macOS/OS X**—Apple Safari 6.x and 11

Deprecated Features and Commands

The following table lists deprecated features and commands.

Table 6 - Deprecated Features and Commands

Deprecated Features and Commands	Comments
Console mode on <code>lmadmin</code> installation on macOS/OS X	On macOS/OS X, the <code>lmadmin</code> installer no longer supports Console mode.FNP-17776, doc issues: FNP-17831, FNP-17832
Non-multithreaded libraries FNP-17824	The following UNIX client libraries used with applications that do not use native multithreaded libraries have been deprecated: <ul style="list-style-type: none">• <code>liblmgr_nomt_pic.a</code>• <code>liblmgr_nomt_pic_tr1.a</code>• <code>liblmgr_nomt.a</code>• <code>liblmgr_nomt_tr1.a</code>
License Generator toolkit	License Generator toolkit is end-of-life. Instead, the <code>responsegen</code> shared object API has been exposed; see the example <code>.\examples\activation\responsegen\ResponseGenA pi.c</code> .
AMZN_IID, HPV_UUID, VMW_UUID	Replaced by VM_UUID
Imbind & LMB_* hostids	Imbind is no longer packaged with FlexNet Publisher archives. Imbind sections have been removed from documentation
VMW_* and HPV_* hostids	It is better to have a hostid that is effective in both physical and virtual systems. As an example, we would recommend ETHER instead of VMW_ETHER (on VMware guests) or HPV_ETHER (on Hyper-V guests) FNP-17150
Non trial-id trial ASRs	ASRs which do not use a trial-id are subject to an issue where deleting trusted storage means no further (non trial-id) ASRs can be loaded. Trial-id ASRs were invented to solve this issue.

Table 6 - Deprecated Features and Commands

Deprecated Features and Commands	Comments
License keys and default strength signatures	License keys have been documented as obsolete for several years. Signatures of type LM_STRENGTH_LICENSE_KEY and LM_STRENGTH_LICENSE_DEFAULT are easily cracked. Flexera strongly recommends that new license files use TRL-strength signatures and that updated clients link with the 'trl-only' (lmgr_trl.lib) library.
Decimal licenses and lc_convert API	Decimal licenses are deprecated. Consequently sections on decimal licenses and the lc_convert API have been removed from documentation.
Trusted Storage on AIX	Trusted storage is no longer supported on AIX.

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