

FlexNet Publisher 2021 (11.18.0) Release Notes

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Revision 00

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Enhancements

This release includes the following enhancements:

- [Batch Checkout](#)
- [Node-locking to a CONTAINER_ID](#)
- [Dongle Type Information](#)
- [Retain Server Borrow Cache in the Server](#)
- [Override of tcp_timeout](#)

Batch Checkout

In the last release, the Batch Checkout feature was released as a minimum viable product. Analysis and prototyping revealed performance improvement that could be achieved in overall latency by aggregating a group, or batch, of checkout requests into a single interaction with the Vendor Daemon. The primary benefit in doing so is to spread the fixed overheads of message handling by client and server and network latency across many checkouts rather than each individual checkout having to incur them.

The Batch Checkout functionality helps to checkout a collection of features and its quantity from the licenses server in a single transaction with Vendor Daemon. A Batch checkout is achieved by using the flexible APIs, which are listed in the APIs section.

Limitation

- A single Batch Checkout exchange between client and server is limited by message size restriction to a maximum of 48 checkout entries.
- Batch Checkout does not have support for Client side Trusted Storage. This support will be added in the upcoming releases.
- Batch Checkout does not have support for checkout filters. This support will be added in the upcoming releases.

Node-locking to a CONTAINER_ID

Introduced support for node locking license server and Feature licenses with docker container ID.

(FNP-24036, FNP-23928)

Dongle Type Information

Imhostid utility and lc_hostid API have been enhanced to display the dongle type information for Safenet dongles. To fetch the dongle type information,

- Added new command line argument “-dtype” in Imhostid utility.

- Added host ID type HOSTID_FLEXID9_DTYPE in lc_hostid API.

(FNP-22895)

Retain Server Borrow Cache in the Server

Earlier, borrow cache was created when licenses were borrowed from the server. In the event of server restart, if newer lines in certificate are updated or sign value has changed, borrow cache was deleted. A new vendor variable ls_allow_updated_feature_borrow is added to retain the server borrow cache.

(FNP-23110)

Override of tcp_timeout

There was an enhancement to provide an option to supersede Feature timeout value over tcp timeout. By introducing a new vendor variable ls_prefer_feature_timeout_over_tcp, the timeout preference has been taken care between TIMEOUT/TIMEOUTALL and tcp_timeout. The socket will consider the timeout value based on whether the vendor variable is enabled during network outage.

(FNP-21935)

Security Updates

This release includes the following security updates:

- [Third Party Library Updates](#)

Third Party Library Updates

Apache Server Upgrade

Apache server has been upgraded to 2.4.46.

(FNP-23859, FNP-24126)

Dongle Updates

This release includes the following dongle updates:

- [Dongle](#)

Dongle

Dongles are not supported in everRun 7.7.

Platform Updates

This section lists platform updates for the following releases:

- [11.18.0 Updates](#)

- [11.17.2 Updates](#)
- [11.17.1 Updates](#)
- [11.17.0 Updates](#)

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 from build 17093 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 FlexNet Publisher 11.18.0, product will not support Universal kit for MacOS/OS X (x86-32 + x64). Customers can continue using x64_mac10 kits.

Support for MacOS/OS X 11.0 (Big Sur) on Intel Architecture

In this release, FlexNet Publisher x64_mac10 kit supports running on MacOS/OS X 11.0 (Big Sur) Intel architecture.

11.17.2 Updates

The 11.17.2 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 2020 R1 (20.1.0)
FlexNet Manager for Engineering Applications	FlexNet Manager for Engineering Applications 2019 R2 (15.10.0)
FlexNet Operations Cloud	FlexNet Operations Cloud 2020 R2 SP1 (20.3.0)

11.17.1 Updates

The 11.17.1 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 2020 R1 (20.1.0)
FlexNet Manager for Engineering Applications	FlexNet Manager for Engineering Applications 2019 R2 (15.10.0)
FlexNet Operations Cloud	FlexNet Operations Cloud 2020 R2 SP1 (20.2.0)

11.17.0 Updates

The 11.17.0 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 2018 R1 (18.1.0)
FlexNet Manager for Engineering Applications	FlexNet Manager for Engineering Applications 2019 R2 (15.10.0)
FlexNet Operations Cloud	FlexNet Operations Cloud 2020 R1 SP2 (20.1.0)

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

Resolved Imadmin, Imgrd, Vendor daemon, and Utility Issue

Extra Checkout with DUP_GROUP Set

Previously, client application with checkout filter consumes extra license even if license is already checked out with similar DUP_GROUP criteria. By enabling new vendor variable `lc_checkout_filter_dup_enable` the feature license will follow same DUP_GROUP behavior as without checkout filter.

(FNP-19262)

Fix for Imstat when LM_PROJECT is Set

The Imstat utility was failing to fetch the information from lower version server, when the LM_PROJECT environment variable was set on client. This issue has been fixed. Now, Imstat utility displays the proper feature information even after setting the LM_PROJECT environment variable.

(FNP-24422)

Resolved Issue Between Client and License Server

Socket Connection Closure

In Java client application, unused open socket connection were not closed after the check in of license. This issue has been fixed and now, all the open socket connections that are no longer in use will be closed.

(FNP-23612, FNP-24240)

Queued License Status in Java SDK

The checkoutIsStillQueued API had failed to return the correct status of license queued status and for ASYNC license checkouts, no heartbeat was implemented. Now, the checkoutIsStillQueued API returns the correct status of the queued licenses and for ASYNC license checkout, heartbeat runs in background that keeps the updated connection status for the queued licenses.

(FNP-23946, FNP-23947)

Access/Modify Underlying LicenseServer Object in Java SDK

Previously in Java application, there was no provision to fetch information of license server where feature license has been queued. New getQueuedLicenseSource and setQueuedLicenseSource APIs have been introduced now to access/modify underlying LicenseServer object.

(FNP-24449)

Resolved Issue Specific to Trusted Storage-Based Licensing

Fix for UMN1 Inconsistency

UMN1 value was fetched inconsistently in few PCs. Enhancement has been provided for more stable solution to fetch UMN1 using well defined Windows storage management based APIs.

(FNP-23614)

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)

Issues on Windows 10 Version 2004

There may be some issues seen on Windows 10 Version 2004 when Sentinel LDK Run-time Environment version 7.100 or earlier is already installed or will be installed. FlexNet Publisher toolkit latest releases (since 11.17.0) have already been upgraded to LDK version 7.103 and issue might not occur on upgraded kits. The issue is not yet tested as FlexNet Publisher has not introduced the support for Windows 10 Version 2004 in this release.

(FNP-23418)

Known Imadmin Issues

Imadmin Silent Installer not Displaying Required Error Message

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

(FNP-6942)

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 Imgrd), Imdiag 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)

Memory Leak - Batch Checkout

The memory leak has been encountered during batch checkout process on client side. It will be resolved in successive FNP release.

(FNP-24736)

Known Issues Specific to Trusted Storage–Based Licensing

Borrow Activation to a Linux Client Causes a Crash

The **flxActBorrowActivate** 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)

Known Java Issues

There is no known Java issue in the release 11.18.0.0.

System Requirements

The System Requirements include the following:

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

Tested Platforms

The following sections describe the platforms tested with the FlexNet Publisher 2021 (11.18.0) 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	x86	RHEL 6
Linux 32-bit	x64	RHEL 8 RHEL 7 SLES 11 SP4 SLES 12 SP5
Linux 64-bit	x64	RHEL 6, 7 and 8 SLES 11 SP4, SLES 12 SP4, SLES 12 SP5, SLES 15 SP1, and SLES 15 SP2 Ubuntu 16.04, 18.04, and 18.10
Linux 64-bit	ARMv8-A (AArch64)	RHEL 7 and 8 SLES 15
macOS/OS X 64-bit	x64	MacOS 10.15 MacOS 10.14
Microsoft Windows 32-bit	x86	Windows 10 Windows 7 SP1 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
Microsoft Windows 64-bit	x64	Windows 10
		Windows 7 SP1
		Windows Server 2019
		Windows Server 2016
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	

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	<ul style="list-style-type: none"> Solaris x86 	Java Standard Edition 1.8
	<ul style="list-style-type: none"> Solaris x64 	
	<ul style="list-style-type: none"> Solaris SPARC 32-bit 	Java Standard Edition 1.8 and 1.11
	<ul style="list-style-type: none"> Solaris SPARC 64-bit 	
	<ul style="list-style-type: none"> Windows x86 	
	<ul style="list-style-type: none"> Windows x64 	
	<ul style="list-style-type: none"> Linux x86 	
	<ul style="list-style-type: none"> Linux x64 	
	<ul style="list-style-type: none"> macOS x64 	

Detailed Platform Information

The following sections list the operating systems and their associated hardware platforms tested with FlexNet Publisher 2021 (11.18.0). 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](#)
- [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

Item	Description
Tested Compiler	<ul style="list-style-type: none"> Visual Studio 2019 (16.8.3) Visual Studio 2017 (15.9.29) Visual Studio 2015 Update 3 Visual Studio 2013 Update 5
Notes	<ul style="list-style-type: none"> Imadmin 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 15.1.0 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 5.2.18 Parallels Desktop 15.1.2 for MAC 10.15.4 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

Item	Description
Tested Compiler	<ul style="list-style-type: none"> ● Visual Studio 2019 (16.8.3) ● Visual Studio 2017 (15.9.29) ● Visual Studio 2015 Update 3 ● Visual Studio 2013 Update 5
Notes	<ul style="list-style-type: none"> ● <code>lmadmin</code> is supported using its 64-bit binary. While the 32-bit <code>lmadmin</code> binary (contained in the <code>x86_n3</code> toolkit) continues to be supported on 64-bit systems, Flexera recommends using the 64-bit binary on 64-bit systems. ● Multiple Ethernet hostids are supported. ● Short-code transactions are supported. ● Prepped Trusted Configuration is supported. ● The <code>lmtools</code> utility cannot interact with the license server manager (<code>lmgrd</code>) when <code>lmgrd</code> is run as a service. ● Tested virtual machine platforms include: <ul style="list-style-type: none"> VMware Workstation 15.1.0 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 5.2.18 Parallels Desktop 15.1.2 for MAC 10.15.4 QEMU-KVM (Host OS: CentOS 8) <ul style="list-style-type: none"> ● Hypervisor: <code>qemu-kvm-ev-4.2.0</code> ● Hypervisor Services: <code>libvirt-daemon-kvm-6.0.0</code> ● Virtual Machine Manager: <code>vmm v2.2.1</code>
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_ls
Package Identifier	i86_ls
Tested Compiler	For x86: <ul style="list-style-type: none">● gcc 8.2.1 (RHEL 8)● gcc 4.8.5 (RHEL 7)● gcc 4.4.7 (RHEL 6)● gcc 4.3.4 (SLES 11 SP4)
Notes	<ul style="list-style-type: none">● lmadm 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 6.7VMware Workstation 15.1.0Microsoft Windows Server 2019 Hyper-VMicrosoft Windows 10 Hyper-VCitrix XenServer 8.0Oracle Virtual Box 5.2.18Parallels Desktop 15.1.2 for MAC 10.15.4QEMU-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
Tested Compiler	For x64: <ul style="list-style-type: none">● gcc 4.8.5 (RHEL 7)● gcc 4.4.7 (RHEL 6)● gcc 8.2.1 (RHEL 8.0)● gcc 7.3.1 (SLES 15)● gcc 7.4.1 (SLES 15 SP1)● gcc 7.5.0 (SLES 15 SP2)● 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)

Item	Description
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_Isb 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 15.1.0 Microsoft Windows Server 2019 Hyper-V Microsoft Windows 10 Hyper-V Citrix XenServer 8.0 Oracle Virtual Box 5.2.18 Parallels Desktop 15.1.2 for MAC 10.15.4 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> .

ARMv8-A (AArch64)

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

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)

Item	Description
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
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"> ● 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

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

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	<p>For x86:</p> <ul style="list-style-type: none"> ● cc (Sun C) 5.11 ● cc (Sun C) 5.15 <p>For SPARC 32-bit:</p> <ul style="list-style-type: none"> ● cc (Sun C) 5.14 ● cc (Sun C) 5.15

Item	Description
Notes	<ul style="list-style-type: none"> ● lmadm 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	<p>For x64:</p> <ul style="list-style-type: none"> ● cc (Sun C) 5.11 ● cc (Sun C) 5.15 <p>For SPARC 64-bit:</p> <ul style="list-style-type: none"> ● cc (Sun C) 5.14 ● cc (Sun C) 5.15

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_sun and sun64_u toolkits) continues to be supported on 64-bit systems, Flexera recommends using the 64-bit binary on 64-bit systems. • Shared 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™)
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"> • 1madmin 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">● lmadm is supported using its 64-bit binary. While the 32-bit lmadm binary (contained in the ppc_u toolkit) continues to be supported on 64-bit systems, Flexera recommends using the 64-bit binary on 64-bit systems.● You must use ar -X64 and strip -X64 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 12 (Warnings are observed during installation and uninstallation of lmadm installer on Windows as mentioned in FNP-22382) and in MAC lmadm installer will not work as mentioned in FNP-24247

Item	Description
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
Notes	<ul style="list-style-type: none"> • <code>lmadmin</code> has not been tested in this toolkit. • On Intel Itanium, use the <code>lmhostid</code> 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>>lmhostid >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) >lmhostid -long (returns hexadecimal hostid)</pre> • Multi-threaded licensing libraries are available on Intel Itanium.
Toolkit Functionality	Licensing based on license files.

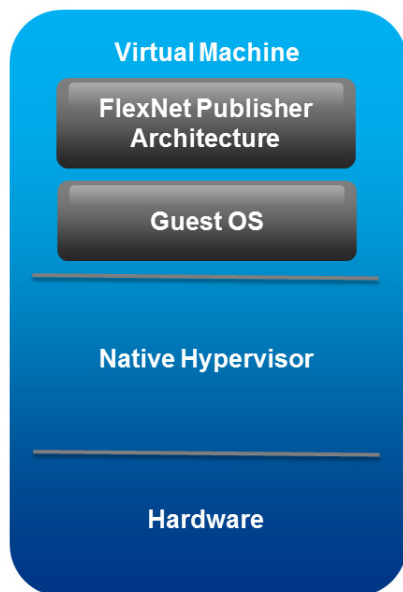
Toolkits That Support Prepped Trusted Configuration

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)
- universal_mac10 (Universal Mac)
- x64_mac10 (Universal Mac)

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	VMware ESXi 6.5 and 6.7 Citrix XenServer 8.0 VMware Workstation 15.1.0 Oracle VirtualBox 5.2.18 PARALLELS
	Windows 10	VMware ESXi 6.5 and 6.7 Citrix XenServer 8.0 VMware Workstation 15.1.0 Oracle VirtualBox 5.2.18 QEMU-KVM PARALLELS everRun 7.7
i86_n, x64_n	Windows Server 2016	everRun 7.7
i86_n, x64_n	Windows 10 Windows 7 SP1 Windows Server 2019	Microsoft Hyper-V from Windows Server 2019 Microsoft Hyper-V from Windows 10 Pro
	Windows Server 2016 Windows Server 2019	VMware ESXi 6.5 and 6.7 Citrix XenServer 8.0 QEMU-KVM PARALLELS everRun 7.7

Table 3 - Tested Virtualization Stacks

FlexNet Publisher Architecture	Guest OS	Hypervisor
i86_1sb	RHEL 6, 7, and 8	VMware ESXi 6.5 and 6.7
	SLES 11 SP4	VMware Workstation 15.1.0
		Citrix XenServer 8.0
		QEMU-KVM
		PARALLELS
		Microsoft Hyper-V from Windows Server 2019
		Microsoft Hyper-V from Windows 10 Pro
	Oracle VirtualBox 5.2.18	
x64_1sb	RHEL 6, 7, and 8	VMware ESXi 6.5 and 6.7
	SLES 11 SP4, SLES 12 SP4, SLES 15, SLES 15 SP1, and SLES 15 SP2	VMware Workstation 15.1.0
		Citrix XenServer 8.0
		PARALLELS
		Microsoft Hyper-V from Windows 10 Pro
		Oracle VirtualBox 5.2.18
i86_1sb,x64_1sb	RHEL 8	everRun 7.7 QEMU-KVM



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.

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 10		VM UUID (previously AMZN_IID) AMZN_EIP FlexEnabled clients: AMZN_IID ETHER
i86_lsb, x64_lsb	• RHEL 6 and 7	Google Cloud	License servers:
	• SLES 11 SP4	Microsoft Azure	VM_UUID FlexEnabled clients: AMZN_IID ETHER
i86_lsb, x64_lsb	• RHEL 6, 7 and 8	Amazon EC2	License servers:
	• SLES 11 SP4 and SUSE 15		AMZN_EIP or VM_UUID FlexEnabled clients: AMZN_IID ETHER

Table 4 ▪ Tested Cloud Environments

FlexNet Publisher Architecture	Tested OS	Cloud Platform	Host ID
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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

Imadmin has been tested on the following platforms.

Table 5 ▪ Tested Imadmin 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	x86	RHEL 6
Linux 32-bit	x64	RHEL 7 and 8 SLES 11 SP4

Table 5 - Tested lmadmin Platforms

Platform Architecture	Processor Type	Operating System
Linux 64-bit	x64	RHEL 6, 7 and 8
		SLES 11 SP4, SLES 12 SP4, SLES 15, SLES 15 SP1, and SLES 15 SP2
		Ubuntu 16.04, 18.04, and 18.10
macOS/OS X 64-bit	x64	MacOS 10.15
		MacOS 10.14
Microsoft Windows 32-bit	x86	Windows 10
		Windows 7 SP1
		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
Microsoft Windows 64-bit	x64	Windows 10
		Windows 7 SP1
		Windows Server 2019
		Windows Server 2016
		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.

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.
Non-multithreaded libraries	<p>The following UNIX client libraries used with applications that do not use native multithreaded libraries have been deprecated:</p> <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\ResponseGenApi.c</code> .
AMZN_IID, HPV_UUID, VMW_UUID	Replaced by VM_UUID
<code>lmbind</code> & <code>LMB_*</code> hostids	<p><code>lmbind</code> is no longer packaged with FlexNet Publisher archives.</p> <p><code>lmbind</code> sections have been removed from documentation</p>

Table 6 - Deprecated Features and Commands

Deprecated Features and Commands	Comments
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)
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.
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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