

FlexNet Publisher 2023 R1 (11.19.3) Release Notes

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Revision 03

Introduction	3
Enhancements.....	3
Enhanced the Amazon Web Service Instance Detection	3
Introduced Support for Nutanix AHV Hypervisor.....	3
Security Updates	4
Dongle Updates	4
Platform Updates.....	5
11.19.3 Updates.....	5
Integrated Products and Tested Versions	5
Windows OS.....	5
macOS.....	6
Linux OS	6
HP-UX.....	6
Future of FlexNet Publisher Support for the Windows 32-Bit Kit	6
Hypervisor.....	7
11.19.2 Updates.....	7
Integrated Products and Tested Versions	7
Windows OS.....	8
macOS.....	8
Linux OS	8
Oracle Java	8
Browsers.....	9
11.19.1 Updates.....	9
Integrated Products and Tested Versions	9
Windows OS.....	9
Oracle.....	10
Imadmin.....	10
macOS.....	10
11.19.0 Updates.....	10
Integrated Products and Tested Versions	10
Windows OS.....	11
macOS.....	11
Resolved Issues.....	11
Resolved Imadmin, Imgrd, Vendor daemon, and Utility Issues.....	11
Resolved Issues between Client and License Server	11

Resolved General Issues.....	13
Known Issues	13
Known General Issues	13
Known Dongle Issues	14
Known Imadmin Issues.....	15
Known Issues Specific to License File-Based Licensing	15
Known Issues Specific to Secured Communication	15
System Requirements.....	16
Tested Platforms	16
C/C++ Toolkits.....	16
Java Toolkits.....	18
Detailed Platform Information.....	18
Toolkits That Support Prepped Trusted Configuration.....	32
Virtualization.....	32
Tested Cloud Environments.....	35
System Requirements for Imadmin	36
Tested Platforms	36
Additional System Requirements	37
Tested Browsers.....	38
Deprecated Features and Commands	38
Legal Information	39

Introduction

This Release Notes document summarizes the features, enhancements, and updates delivered with FlexNet Publisher 2023 R1 (11.19.3) in February 2023. The document includes the following information:

- [Enhancements](#)
- [Security Updates](#)
- [Dongle Updates](#)
- [Platform Updates](#)
- [Resolved Issues](#)
- [Known Issues](#)
- [System Requirements](#)
- [Deprecated Features and Commands](#)
- [Legal Information](#)

Enhancements

This release includes the following enhancements:

- [Enhanced the Amazon Web Service Instance Detection](#)
- [Introduced Support for Nutanix AHV Hypervisor](#)

Enhanced the Amazon Web Service Instance Detection

In previous releases, the **Amazon Web Services (AWS) EC2 cloud** instance detection was based only on the **Instance Metadata Services Version 1 (IMDSv1)** mechanism.

In this release, the **Amazon Web Service (AWS) EC2 cloud** instance detection has been enhanced by enabling the detection of the EC2 instances configured to provide the **Instance Metadata Service Version 2 (IMDSv2)**, in addition to the **Instance Metadata Service Version 1 (IMDSv1)**.



Note - This enhancement is supported on both Linux and Windows EC2 instances.

(Cases 02709422, 02722503; FNP-27596)

Introduced Support for Nutanix AHV Hypervisor

In this release, FlexNet Publisher supports a new hypervisor, Nutanix AHV, in its virtualization support stack.

(Cases 02484981, 02510841; FNP-26034)

Security Updates

This release includes the following security updates:

- **Third-Party Library Updates**

Third-Party Library Updates

Apache mod-security

The Apache mod-security has been upgraded from version 2.9.5 to version 2.9.6.
(FNP-28189)

Apache Xerces-c

The Apache Xerces-c has been upgraded from version 3.2.3 to version 3.2.4.
(FNP-27300)

libexpat

The libexpat has been upgraded from version 2.4.9 to version 2.5.0.
(FNP-27318)

OpenSSL

The OpenSSL has been upgraded from version 1.1.1q to version 1.1.1s.
(FNP-27321)

libxml2

The libxml2 has been upgraded from version 2.9.14 to version 2.10.3.
(FNP-27320)

OpenLDAP

The OpenLDAP has been upgraded from version 2.6.1 to version 2.6.3.
(FNP-27298)

Dongle Updates

This section lists the dongle drivers that have been updated in this release.

SafeNet Dongle Drivers

The SafeNet dongle drivers have been upgraded from version 8.43 to version 8.53.
(FNP-27322)

Platform Updates

This section lists platform updates for the following releases:

- [11.19.3 Updates](#)
- [11.19.2 Updates](#)
- [11.19.1 Updates](#)
- [11.19.0 Updates](#)

11.19.3 Updates

Updates have been made in the following areas for FlexNet Publisher 11.19.3:

- [Integrated Products and Tested Versions](#)
- [Windows OS](#)
- [macOS](#)
- [Linux OS](#)
- [HP-UX](#)
- [Future of FlexNet Publisher Support for the Windows 32-Bit Kit](#)
- [Hypervisor](#)

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 2022.05 (22.5.0)
FlexNet Manager for Engineering Applications	FlexNet Manager for Engineering Applications 2022 R2 (15.14.0)
FlexNet Operations Cloud	FlexNet Operations Cloud 2023.01 (23.1.32)

Windows OS

End of Support Windows 7 ESU

FlexNet Publisher no longer supports the Windows 7 ESU platform from FlexNet Publisher release R1, 2023, onwards.

macOS

Support for macOS 12.5

FlexNet Publisher will support the macOS 12.5 platform from FlexNet Publisher release R2, 2023, onwards.

End of Life macOS 10.15

FlexNet Publisher no longer supports the macOS 10.15 platform from FlexNet Publisher release R1, 2023, onwards.

Linux OS

End of Support Ubuntu 18.04

FlexNet Publisher will not support the Ubuntu 18.04 platform from FlexNet Publisher release R2, 2023, onwards.

End of Life SUSE Linux 15

FlexNet Publisher no longer supports the SUSE Linux 15 platform from FlexNet Publisher release R1, 2023, onwards.

HP-UX

End of Life HP-UX

FlexNet Publisher will not support the HP-UX platform from FlexNet Publisher release R3, 2024, onwards.

Future of FlexNet Publisher Support for the Windows 32-Bit Kit

Previously, Revenera announced that support for the FlexNet Publisher Windows 32-Bit kit would end with the 2023 R3 release. After getting feedback from several producers, Revenera decided to continue supporting the 32-bit Windows platform as long as Microsoft is supporting it. If anything changes, Revenera reserves the right to revisit this decision, and give advance notice.



Note - The following details our support for the FlexNet Publisher Windows 32-bit kit:

- The FlexNet Publisher Windows 32-bit kit will be supported as long as it is supported by Microsoft.
- The FlexNet Publisher 32-bit source code is built using Visual Studio 2023. .
- Customers can use the 32-bit FlexNet Publisher SDKs and build their project or solution on Visual Studio 2013, Visual Studio 2015, Visual Studio 2017, Visual Studio 2019, or Visual Studio 2022.



Note - FlexNet Publisher no longer supported the 32-bit Windows Imadmin from FlexNet Publisher release R2, 2022, onwards.

Hypervisor

Support for Nutanix AHV

In this release, FlexNet Publisher supports the Nutanix AHV.



Note - The following details of support for the Nutanix AHV:

- Guest operating systems supported are Windows and Linux.
- Supported hostids are VMID and ETHERNET.
- No support for GenerationID.

11.19.2 Updates

Updates have been made in the following areas for FlexNet Publisher 11.19.2:

- [Integrated Products and Tested Versions](#)
- [Windows OS](#)
- [macOS](#)
- [Linux OS](#)
- [Oracle Java](#)
- [Browsers](#)

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 2021 R1 (15.12.0)
FlexNet Operations Cloud	FlexNet Operations Cloud 2022.09 (22.9.34)

Windows OS

End of Life Windows 7 ESU

FlexNet Publisher will not support the Windows 7 ESU platform from FlexNet Publisher release R1, 2023, onwards.

End of Life Windows Server 2016

FlexNet Publisher no longer supports the Windows Server 2016 platform from FlexNet Publisher release R3, 2022, onwards.

macOS

End of Life macOS 10.15

macOS 10.15 (x64_mac10-11.19.3.0_v6.tar.gz) is no longer supported.

Linux OS

Support for RHEL 9

In RHEL9, the LSB component is not offered as part of the supported distribution. Components in FlexNet Publisher, such as Imgrd, require the LSB-loader. If this is not present, Imgrd and other utilities will fail to run with a `No such file or directory` error.

As a workaround, specify a soft link to the native loader. The following symlinks have been verified on RHEL9:

32-bit Linux

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

64-bit Linux

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

From 11.13.1.3, the `install_fnp.sh` script will issue a warning if LSB is not detected on the host.

Additionally, this script supports a new `-nolbs` parameter, which sets up the above symlinks.

Oracle Java

End of Support Oracle Java 8

FlexNet Publisher no longer supports Oracle Java 8 from FlexNet Publisher release R3, 2022, onwards.

Browsers

End of Life Microsoft Internet Explorer 11

FlexNet Publisher's lmadmin no longer supports the Windows Web browser Microsoft Internet Explorer 11 from FlexNet Publisher release R3, 2022, onwards.

11.19.1 Updates

Updates have been made in the following areas for FlexNet Publisher 11.19.1:

- [Integrated Products and Tested Versions](#)
- [Windows OS](#)
- [Oracle](#)
- [lmadmin](#)
- [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 2021 R1 (15.12.0)
FlexNet Operations Cloud	FlexNet Operations Cloud 2022.4 (22.4.41)

Windows OS

End of Life Windows Server 2016

FlexNet Publisher no longer supports the Windows Server 2016 platform from FlexNet Publisher release R3, 2022, onwards.

New FlexNet Publisher Windows kit

A new 64-bit Windows FlexNet Publisher kit has been introduced with suffix _vc16. FlexNet Publisher still supports the default 32-bit & 64-bit Windows FlexNet Publisher kit without the suffix _vc16.

Oracle

End of Life Oracle 8 Support

FlexNet Publisher provides limited support for Oracle 8 in FlexNet Publisher release R2, 2022.

Oracle 8 is no longer supported from FlexNet Publisher release R3, 2022, onwards.

Imadmin

End of Life Imadmin 32-bit

The 32-bit Windows Imadmin will no longer supported from FlexNet Publisher release R2, 2022, onwards.

macOS

End of Life macOS 10.14

macOS 10.14 is no longer supported from FlexNet Publisher release R2, 2022, onwards.

11.19.0 Updates

Updates have been made in the following areas for FlexNet Publisher 11.19.0:

- [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 2021 R1 (15.12.0)
FlexNet Operations Cloud	FlexNet Operations Cloud 2022.1 (22.1.29)

Windows OS

Support for Windows 11 OS

In this release, FlexNet Publisher supports Windows 11 (x64_n6, i86_n3).

Support for Visual Studio 2022

In this release, FlexNet Publisher supports Visual Studio 2022.

macOS

Support for macOS 12.0 Monterey

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

(FNP-25505)

Resolved Issues

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

- [Resolved Imadmin, Imgrd, Vendor daemon, and Utility Issues](#)
- [Resolved Issues between Client and License Server](#)
- [Resolved General Issues](#)

Resolved Imadmin, Imgrd, Vendor daemon, and Utility Issues

The following issues related to Imadmin, Imgrd, the vendor daemon, and utilities were addressed in this release:

- [Fixed Package Lines Issues in a Multi Vendor Environment](#)

Fixed Package Lines Issues in a Multi Vendor Environment

In previous releases, when Imgrd served multiple vendor daemons, the lmstat utility output failed to display identical package/feature lines for various vendor daemons, and other vendor daemons also failed to serve these identical package/feature lines. This issue has been resolved.

(Case 02217733, FNP-24057)

Resolved Issues between Client and License Server

The following issues related to the client and license server were resolved in this release:

- Resolved the Windows Platform API Crash
- Oracle Linux OS Reported a Crash
- Loss of User Checked Out Information During Time Out
- Resolved API Failure to Return Licenses

Resolved the Windows Platform API Crash

The API **lc_next_conf** crashed on the Windows platform with an invalid license file path that included the multiple port@host format paths. This issue has been fixed.

(Case 02484956, FNP-26021)

Oracle Linux OS Reported a Crash

A crash was observed on **Oracle Linux** operating systems with the **Intel® Xeon® Gold Processors**, which was caused by a large amount of data retrieved from CPUinfo file for binding functionality. This issue has been resolved.

(Case 02703220, FNP-27584)

Loss of User Checked Out Information During Time Out

If any user's client connection timed out, the license server removed the checked out information for that feature for all users. This could result into an accidental overuse of license. This issue had been observing since FLEXNet Publisher 11.18.2 till FLEXNet Publisher 11.19.2. In this release, this issue has been fixed.

Borrow functionalities of FlexNet Publisher are not impacted by this issue.

When an end customer deploys the FlexNet Publisher vendor daemons with a fix, heartbeat functionality ensure that Orphaned clients are counted and recorded by license server. Orphaned clients are connected back to server based on below heartbeat functionality:

- If Automatic heartbeat is received with default time, Orphaned clients will be counted and attached to license server within 10 minutes.
- If Manual/Custom heartbeat is received, Orphaned clients will be counted and attached to license server based on heartbeat frequency initially defined.

For more details about Heartbeats, refer **Understanding Heartbeats** in *Programming Reference for License File-Based Licensing*.

(Cases 02723840, 02724848, 02728733; FNP-27796)

Resolved API Failure to Return Licenses

The API **lc_borrow_return** intermittently failed to return borrowed licences to the license server during execution. Both FlexNet Publisher release, R3, 2022 and FlexNet Publisher release, R1, 2023 are catered toward fixing known bugs in the functionality. This issue has been resolved.

(Case 02554195, FNP-26922)

Resolved General Issues

The following general issues were resolved in this release:

- [Incorrect Detection of the Amazon Web Services Instance](#)
- [Resolved UMN1 Host ID Issue](#)

Incorrect Detection of the Amazon Web Services Instance

In previous releases, the **Instance Metadata Services Version 1 (IMDSv1)** method was only used for the **Amazon Web Services (AWS) EC2 cloud** instance detection, which led to incorrect detection of the **Amazon Web Services (AWS) EC2 cloud** instance. This issue has been resolved.

(Cases 02709422, 02722503, 02727035; FNP-27596, FNP-28129)

Resolved UMN1 Host ID Issue

The ability of FlexNet Publisher to extract the serial number from the **NVMe (Non-Volatile Memory Express) SSD** Windows system disk has been improved, which has strengthened the generation of the **UMN1 host ID** for Windows.

This may result in a system which did not previously yield a valid or unique value for **UMN1**, now provides a valid one which, differs from the previous release. This could cause an entitlement breakage requiring an activation repair.

(Case 02560657, FNP-26804)

Known Issues

This release includes known issues in the following categories:

- [Known General Issues](#)
- [Known Dongle Issues](#)
- [Known Imadmin Issues](#)
- [Known Issues Specific to License File-Based Licensing](#)
- [Known Issues Specific to Secured Communication](#)

Known General Issues

Build Failure in macOS 12.5 and 12.6 Kits

A build failure is observed, when building the kit for `makefile.act` in macOS 12.5 and 12.6.

(FNP-27500)

LmdiaG Crash in Amazon Web Services

A crash is observed on lmdiaG, when feature/increment lines are node-locked to the AWS (Amazon Web Services)-EC2 virtual attributes such as ami.

This issue has been observed only on lmdiaG. When you are unable to check out a license, lmdiaG enables you to diagnose issues. Regular license life-cycle operations, such as server startup, application startup, and license checkout, are not impacted and continued to work.

(FNP-28278)

Known Dongle Issues

Backward Compatibility Issue Due to the New Signer

As the SafeNet dongle drivers and its DLL are upgraded to version 8.53 and 8.5 respectively, and also the Wibu dongle drivers are upgraded to version 6.60, the dll signature issuer name is changed from "Symantec" to "DigiCert" on Windows. The same is fixed in FlexNet Publisher's code to handle the new signer. Due to this change, backward compatibility is not possible. If you install latest drivers, old clients will not be able to retrieve the dongle ID.

(FNP-26594, FNP-28216)

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 macOS

Dongle drivers are not supported on the macOS platform for FlexNet Publisher release R1, 2023.

(FNP-24876, FNP-24877)

SafeNet Dongle Drivers Support in Linux 32-bit Platform

In FlexNet Publisher release, R1, 2023, the SafeNet dongle drivers with version 8.43 only support the Linux 32-bit platform.

The SafeNet Dongle drivers will not support the Linux 32-bit platform from FlexNet Publisher release, R2, 2023, onwards.

(FNP-28443)

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)

Unable to Start Lmadmin Services Using CLI in Windows Server 2022

The lmadmin services created on Windows 2022 machine is unable to start using command prompt.

(FNP-26481)

Lmadmin Login Error Observed in Windows Server 2022

While logging in to lmadmin in Windows Server 2022 the error "Old password is incorrect" is seen.

(FNP-26482)

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 Secured Communication

The following issues observed when secure communication has been enabled in between FlexEnabled client and vendor daemon. These issues will be resolved in the future releases of FlexNet Publisher.

- On Windows, the triad configuration with secure communication enabled goes down, if any one of the servers in triad is shutdown/restarted.

(FNP-26640)

- When multiple vendors run with secure communication enabled under one Imgrd, the secure checkout is possible only for last secured vendor daemon.
(FNP-26989)

System Requirements

The System Requirements include the following:

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

Tested Platforms

The following sections describe the platforms tested with the FlexNet Publisher 2023 R1 (11.19.3) 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 and 9

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

Platform Type	Hardware Type	Operating System
Linux 64-bit	x64	RHEL 8 and 9
		SLES 15 SP3 and SLES 15 SP4
		Ubuntu 18.04 and 20.4
Linux 64-bit	ARMv8-A (AArch64)	RHEL 8
		SLES 15
macOS/OS X 64-bit	x64	macOS 11.1
		macOS 12.1
macOS ARM 64-bit	ARM-64	macOS 11.7.2
		macOS 12.1
Microsoft Windows 32-bit	x64	Windows Server 2019
		Windows Server 2022
		Windows 10
		Windows 11
Microsoft Windows 64-bit	x64	Windows 10
		Windows 11
		Windows Server 2019
		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 SPARC 32-bit	Java Standard Edition 1.11
	• Solaris SPARC 64-bit	JDK 17
	• 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 2023 R1 (11.19.3). 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 Revenera’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 2022 (17.4.4) • Visual Studio 2019 (16.11.22) • Visual Studio 2017 (15.9.51) • Visual Studio 2015 Update 3

Item	Description
Notes	<ul style="list-style-type: none"> 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 16.1.2 VMware ESXi 7 Microsoft Windows Server 2019 Hyper-V Microsoft Windows 10 Hyper-V Citrix XenServer 8.2 Oracle Virtual Box 6.1 Parallels Desktop 18.0.2 for macOS 12.6 everRun 7.9.1 Nutanix AHV (Version 2020.09.16 Community Edition) QEMU-KVM (Host OS: CentOS 8) <ul style="list-style-type: none"> Hypervisor: qemu-kvm-ev-6.2.0 Hypervisor Services: libvirt-daemon-kvm-8.0.0 Virtual Machine Manager: vmm v3.2.0
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 2022 (17.4.4) Visual Studio 2019 (16.11.23) Visual Studio 2017 (15.9.51) Visual Studio 2015 Update 3

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, Revenera 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 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 16.1.2 VMware ESXi 7 Microsoft Windows Server 2019 Hyper-V Microsoft Windows 10 Hyper-V Citrix XenServer 8.2 Oracle Virtual Box 6.1 Parallels Desktop 18.0.2 for macOS 12.6 everRun 7.9.1 Nutanix AHV (Version 2020.09.16 Community Edition) QEMU-KVM (Host OS: CentOS 8) <ul style="list-style-type: none"> • Hypervisor: qemu-kvm-ev-6.2.0 • Hypervisor Services: libvirt-daemon-kvm-8.0.0 • Virtual Machine Manager: vmm v3.2.0
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	<p>For x86:</p> <ul style="list-style-type: none"> gcc 11.2.1 (RHEL 9) gcc 8.5.0 (RHEL 8)
GLIBC Version	v2.12
Notes	<ul style="list-style-type: none"> Customers can use any GCC that meets FlexNet Publisher's GLIBC version requirement. FlexNet Publisher qualifies the default GCC version that comes with the OS. 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 7 VMware Workstation 16.1.2 Microsoft Windows Server 2019 Hyper-V Microsoft Windows 10 Hyper-V Citrix XenServer 8.2 Oracle Virtual Box 6.1 Parallels Desktop 18.0.2 for macOS 12.6 everRun 7.9.1 Nutanix AHV (Version 2020.09.16 Community Edition) QEMU-KVM (Host OS: CentOS 8) <ul style="list-style-type: none"> Hypervisor: qemu-kvm-ev-6.2.0 Hypervisor Services: libvirt-daemon-kvm-8.0.0 Virtual Machine Manager: vmm v3.2.0
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 11.2.1 (RHEL 9)● gcc 8.5.0 (RHEL 8)● gcc 7.5.0 (SLES 15 SP3)● gcc 7.5.0 (SLES 15 SP4)● gcc 9.4.0 (Ubuntu 20.04)● gcc 7.3.0 (Ubuntu 18.04)
GLIBC Version	v2.34

Item	Description
Notes	<ul style="list-style-type: none"> Customers can use any GCC that meets FlexNet Publisher's GLIBC version requirement. ladmin 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 7 VMware Workstation 16.1.2 Microsoft Windows Server 2019 Hyper-V Microsoft Windows 10 Hyper-V Citrix XenServer 8.2 Oracle Virtual Box 6.1 Parallels Desktop 18.0.2 for macOS 12.6 everRun 7.9.1 Nutanix AHV (Version 2020.09.16 Community Edition) QEMU-KVM (Host OS: CentOS 8) <ul style="list-style-type: none"> Hypervisor: qemu-kvm-ev-6.2.0 Hypervisor Services: libvirt-daemon-kvm-8.0.0 Virtual Machine Manager: vmm v3.2.0
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

Item	Description
Tested Compiler	<ul style="list-style-type: none"> gcc 8.2.1 (RHEL 8) gcc 7.3.1 (SLES 15)
GLIBC Version	v2.17
Notes	<ul style="list-style-type: none"> Customers can use any GCC that meets FlexNet Publisher's GLIBC version requirement. ladmin 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.

Item	Description
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: 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):

- For macOS 11.1, use Xcode 12.4
- For macOS 12.1, use Xcode 13.0

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 11.1, use `xcode-select --print-path` to obtain the correct path and choose an appropriate SDK path.
- For macOS 12.1, use `xcode-select --print-path` to obtain the correct path and choose an appropriate 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 13 • Apple clang version 13.0.0 (clang-1300.0.29.3)
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 11.7.2, use Xcode 13.0
- For macOS 12.1, 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 11.7.2, use `xcode-select --print-path` to obtain the correct path and choose an appropriate SDK path.
- For macOS 12.1, use `xcode-select --print-path` to obtain the correct path and choose an appropriate 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

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"> • lmadm is supported using its 64-bit binary. While the 32-bit lmadm binary (contained in the x86_sun and sun64_u toolkits) continues to be supported on 64-bit systems, Revenera 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"> • lmadm 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, Revenera 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 11 (JDK 11 is not supported on Solaris x86 and x64)• JDK 17 (JDK 17 is not supported on Solaris x86 and x64)• OpenJDK 17 (in macOS 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"> • 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.

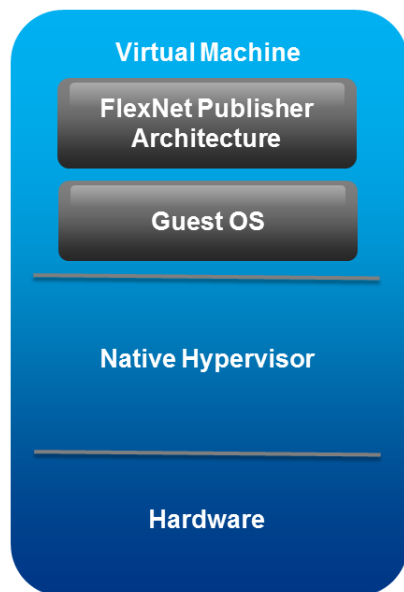
Toolkits That Support Prepped Trusted Configuration

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 10	VMware ESXi 7
		Citrix XenServer 8.2
		VMware Workstation 16.1.2
		Oracle Virtual Box 6.1
		QEMU-KVM
		PARALLELS
		everRun 7.9
i86_n, x64_n	Windows 10	Microsoft Hyper-V from Windows Server 2019
	Windows Server 2019	Microsoft Hyper-V from Windows 10 Pro
	Windows Server 2019	VMware ESXi 7
		Citrix XenServer 8.2
		QEMU-KVM
		PARALLELS
		everRun 7.9
	Windows Server 2022	VMware
i86_lsb	RHEL 7, and 8	QEMU-KVM
		everRun 7.9
		VMware ESXi 7
		VMware Workstation 16.1.2
		Citrix XenServer 8.2
		QEMU-KVM
		PARALLELS
		Microsoft Hyper-V from Windows Server 2019
		Microsoft Hyper-V from Windows 10 Pro
		Oracle Virtual Box 6.1

Table 3 ▪ Tested Virtualization Stacks

FlexNet Publisher Architecture	Guest OS	Hypervisor
x64_lsb	RHEL 7, and 8	VMware ESXi 7
	SLES 12 SP4, SLES 15 SP1, SLES 15 SP2, SLES 15 SP3 and SLES 15 SP4	VMware Workstation 16.1.2
		Citrix XenServer 8.2
		PARALLELS
		Microsoft Hyper-V from Windows 10 Pro
		Oracle Virtual Box 6.1
i86_lsb,x64_lsb	RHEL 8	everRun 7.9
		QEMU-KVM
x64_n6	Windows10 and Windows Server 2019	Nutanix AHV (Version 2020.09.16 Community Edition)
x64_lsb, i86_lsb	RHEL8.7 and SUSE15SP4	Nutanix AHV (Version 2020.09.16 Community Edition)

**Note** ▪ Note the following:

- 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 10	Google Cloud	License servers:
	• Windows Server 2019	Microsoft Azure	VM_UUID FlexEnabled clients: ETHER
i86_n, x64_n	• Windows Server 2019	Amazon EC2	License servers:
	• Windows Server 2022		VM UUID (previously AMZN_IID) AMZN_EIP FlexEnabled clients: AMZN_IID ETHER
i86_lsb, x64_lsb	• RHEL 7* and RHEL 8	Google Cloud	License servers:
	• SLES 15 SP2		VM_UUID FlexEnabled clients: AMZN_IID ETHER
i86_lsb, x64_lsb	• RHEL 8	Microsoft Azure	License servers:
	• SUSE 15 SP3		VM_UUID FlexEnabled clients: AMZN_IID ETHER
i86_lsb, x64_lsb	• RHEL 7* and 8	Amazon EC2	License servers:
	• SUSE 15 SP3		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	x64	RHEL 8 and 9
Linux 64-bit	x64	RHEL 8 and 9 SLES 15 SP3 and SLES 15 SP4 Ubuntu 18.04 and 20.4

Table 5 ▪ Tested lmadm Platforms

Platform Architecture	Processor Type	Operating System
macOS/OS X 64-bit	x64	macOS 11.1
		macOS 12.1
macOS ARM 64-bit	ARM-64	macOS 11.7.2
		macOS 12.1
Microsoft Windows 32-bit	x64	Windows Server 2019
		Windows Server 2022
Microsoft Windows 64-bit	x64	Windows 10
		Windows 11
		Windows Server 2019
		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 lmadm binaries. Revenera recommends their use on 64-bit platforms. Separate 32-bit lmadm installers and binary archives are also available and can be used on 64-bit platforms if necessary.
- The asterisk (*) symbol indicates that the version of the operating system is supported and not tested in the current release.

Additional System Requirements

lmadm has these additional requirements:

- To use lmadm on Windows platforms, the relevant Microsoft Visual C++ 2013 Redistributable Package must be installed.
- The lmadm 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 lmadm installer.

Tested Browsers

lmadmin is tested on the following Web browsers:

- **Red Hat Linux**—Mozilla Firefox 46.x, Google Chrome 106.x
- **Windows**—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 lmadmin installation on macOS/OS X	On macOS/OS X, the lmadmin 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">● liblmgr_nomt_pic.a● liblmgr_nomt_pic_tr1.a● liblmgr_nomt.a● liblmgr_nomt_tr1.a
License Generator toolkit	License Generator toolkit is end-of-life. Instead, the responsegen 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
Imbind & LMB_* hostids	<p>Imbind is no longer packaged with FlexNet Publisher archives.</p> <p>Imbind sections have been removed from documentation</p>
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)

Table 6 ▪ Deprecated Features and Commands

Deprecated Features and Commands	Comments
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. Revenera 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.
Three-Server Redundancy	Three-server redundancy is supported with license file-based licensing only. It is not supported with trusted storage-based licensing.

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