

# Sentinel<sup>®</sup>RMS

## Release Notes

v8.5.1 for Solaris x86 (32-bit and 64-bit)





## Document Revision History

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## Confidential Information

The Sentinel RMS SDK is designed to protect your applications from unauthorized use. The less information that unauthorized people have regarding your security system, the greater your protection. It is in your best interest to protect the information herein from access by unauthorized individuals.



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# Sentinel RMS v8.5.1 for Solaris x86 (32 and 64-bit) - Release Notes

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## About This Document

This document contains details about the new features and installation of the product. This is a service pack release and replaces any previous release.

## Product Overview

Sentinel RMS is a software licensing SDK for your applications. It increases revenue by authorizing the use of your applications and offers a variety of licensing schemes to boost your product sales. It also provides tools that system administrators can use to track and manage licenses in a network.

## What's New in This Release?

This section provides details about the new features introduced in this release.

### Aggregate Licenses to Cater to Peak Usage Periods

Prior to this release, multiple licenses of the same feature-version combined with each other in either an exclusive or additive way. With the 8.5.1 release, a third property to govern the combination of licenses has been introduced, known as aggregate licenses.

With aggregate licenses, multiple license strings can be combined to form an aggregated hard and soft limit, yet the start and expiry dates of the individual license strings are maintained in an independent manner. The aggregated hard limit can be used to fulfill the sudden increase in demand during the peak usage period.

Below are the related highlights and enhancements:

- The hard and soft limits defined within the individual licenses will be summed. Therefore, the maximum number of allowed license tokens (or seats) is defined by the combined hard limit at any given point.
- Such licenses must have same license properties, except the following properties that could be same or different:
  - Start date
  - End Date
  - Hard Limit
  - Soft Limit
  - Client lock criteria/information
  - License output type (encrypted/concise readable/expanded readable)
- A token which is issued to an application will always hold the earliest start date and the latest expiry date (end date) defined within all of the combined licenses.
- The License Manager v8.5.1 (or later) must be deployed in order to allow license aggregation.
- An aggregate license has lower priority than an exclusive license, but has higher priority than an additive license.
- You can use the lscgen utility or the license generator library (available for Windows and Linux platforms only) to generate aggregate licenses. If you are using the license code generator library, call the new API VLScgAllowAggregateLicense to verify the combining property value for aggregate licenses.

Refer to the "Chapter - License Aggregation and Peak Usage" in the Sentinel RMS SDK Developer's Guide for more details about this feature.

### Loading Future Date Aggregate Licenses

Earlier, licenses with start dates in future could not be loaded in the License Manager. Now, aggregate licenses with start date in future can be loaded in an inactive state. Later, when their start dates are reached, these licenses seamlessly participate in the license request and service process. Hence, future date aggregate licenses can bring around additional value when they are deployed in anticipation of a hike in software demand.



Aggregate licenses which have start dates set in the future can still be loaded onto the License Manager, however, they cannot be requested or aggregated until their start date has been reached.

### Custom User Information for Clients

You can set custom user information using a new client side API VLSetCustomData. This information is passed to the License Manager when a license request API or its variant is called. It can then be retrieved through the:



- License Manager usage logs (in the user and host name fields of the log file)
- Query APIs (VLSgetClientInfo and VLSgetHandleInfo)
- Ismon (a License Manager monitoring utility)

Refer to the topic “Setting Custom Client Information” in the Appendix - Customization Features of the *Sentinel RMS SDK API Reference Guide*.

### Anonymous User Information in Usage Logs

The system administrators on the customers’ site can now hide the real usernames and host names saved in the License Manager usage logs. Using any of the following ways, anonymous information (which are SHA-256 based unique hashes) will be used instead of the real information:

#### Using the New Environment Variable

In this release, a new environment variable LS\_LOG\_ANONYMITY is introduced. The system administrators can set this on the License Manager host system to allow creation of anonymous logs.

#### Using the New License Manager Start-up Option

Alternatively, the `-log-anonymity` option can be used.

Refer to the *Sentinel RMS System Administrator’s Help* for details on how to configure the License Manager start up options and set environment variables.



To map the anonymous user information with the real details, an XML file will be generated along with the usage log file. It would be kept at the same location, having the same name as the usage log file and the `.xml` extension.

### Perpetual Licenses Renamed to Repository Licenses

Now, perpetual licenses are renamed to repository licenses. This change would have no impact on the existing implementations.

Refer to the “Chapter - Repository Licenses” in the *Sentinel RMS SDK Developer’s Guide* for details about repository licenses.


### Documentation Enhancements

The following documentation sections are updated:

- Added information in the *Sentinel RMS API Reference Guide* about the various macro functions.
- Added information in the *Sentinel RMS System Administrator’s Help* about the various transaction types recorded in the usage log.
- Rebranded the "RMS License Server" to "RMS License Manager" throughout the documentation.

## Problems Corrected in This Release

In this release, the following problems are corrected:


WT/Tas- k Ref#	Problem Description	Documented in Main Docs?
85249	<p>When the reverse DNS lookup failed for subnet locked licenses, an error was encountered in calling the LSRequest API. To resolve this issue, instead of returning an error, the hostname is looked into the machineID structure (obtained from the client).</p> <div data-bbox="354 674 1024 762" style="border: 1px solid black; padding: 5px;">  Use of this workaround is recommended under situations when the reverse lookup is failing.         </div>	No
85137	<p>In the case of subnet locked licenses, the IP address was not shown correctly in lsmon. The incorrect IP led to failure of license request. The problem is corrected in this release.</p>	No
85102	<p>In the case of stand-alone licensing, an unknown internal error was encountered when the system initialization was not performed on a system. The problem is corrected in this release. Now, error VLS_PERSISTENCE_CONFIGURATION_ERROR (164) is shown.</p>	No
85236	<p>The redundant License Manager pool stopped responding when the leader was restarted after dynamic addition of a license in the pool. The problem is corrected in this release.</p>	No
85012	<p>The License Manager returned VLS_REHOST_BUFFER_TOO_SMALL error during network license revocation when the number of tokens to be revoked and/or the number of tokens remaining were in 5 digits (9999+). Also, no revocation ticket was generated even when the licenses were revoked successfully. The problems are corrected in this release. Now, the error is not returned (when the above-mentioned limits are reached) and a revocation ticket is generated.</p>	No
85056	<p>The VLSisVirtualMachine API returned an incorrect error VLS_INTERNAL_ERROR when the License Manager was of version earlier than 8.4.0 and the application was licensed using libraries of version later than 8.4.0. Now, the correct error VLS_NOT_SUPPORTED is returned.</p>	No
85079	<p>Cleaning up of commuter information on the License Manager is required when tokens are checked out for maximum duration and client machine has crashed. The</p>	<p>Yes Refer to the documentation of the VLScleanNetworkPersistenceInfo API in the <i>Sentinel RMS SDK API</i></p>

WT/Task Ref#	Problem Description	Documented in Main Docs?
	problem is corrected in this release. To restore the checked out tokens on the License Manager, a cleaning option has been provided through the VLSclean-NetworkPersistenceInfo API.	<i>Reference Guide.</i>
84952 84989	The Isdecode utility and/or the decode library (the VLScgDecodeLicenseExt API) crashed intermittently when a truncated license string was provided. The problem is corrected in this release. Now, the error VLS_INVALID_LICENSE is returned.	No
85051	The token sharing problem in case of group reservation is corrected in this release.	No
85158	In a scenario, access rights to a license file on the License Manager were modified before calling the VLSdeletelicensefromFile API. However, after the API was called, the access rights were regained. The problem is corrected in this release, and now the access rights are not modified when the VLSdeletelicensefromFile API is called.	No
84924	An expired commuter license maintained priority over a normal stand-alone valid license. This behavior was incorrect. Now, the rules of license prioritization are modified due to introduction of aggregate licenses. As a result, the expired licenses are placed after valid licenses.	No
85215	The lshost file contained same settings as the LSHOST environment variable. However, the licensed application failed to follow the settings defined in the lshost file in the required order. The problem is corrected in this release. Now, the behavior is same as the LSHOST environment variable.	No
85395	The License Manager crashed under few scenarios when many tokens were requested and checked out. The problem is corrected in this release.	No
85406	The Sentinel RMS License Manager failed to create further usage logs when 101 log files were created. Beyond this, the 101st usage log file fails to be renamed to <usagelogfilename>.00 (overwriting the original .00 file). As a result, the usage log operation gets suspended. This problem (WT#84571) is corrected. Now, when the maximum size of the 101st file is reached, the 102nd file will be created by renaming 101st file to existing <usagelogfilename>00.log file.	No
85062	License revocation failed when the vendor ID contained	No

WT/Task Ref#	Problem Description	Documented in Main Docs?
	in the permission ticket (PT) and license mismatched. The problem is corrected in this release.	
84993	Delayed response was received when a client switched to the broadcast mode after it could not find a non-existent license on a particular License Manager. Since the client did not have a grace license installed, it should have returned the error VLS_NO_SUCH_FEATURE immediately, rather than broadcasting for a license in the subnet. The problem is corrected in this release. Now, the error is returned immediately under this scenario.	No
84997 85098	The RMS packet transmission failures (time outs) caused to by large payload are corrected in this release. The transmission is now optimized for packet sizes smaller than 1432 bytes.	No
85003	The message written to CLEAN.LOG by <i>lsclean.exe</i> had a typo. The problem is corrected in this release.	No
85001	The <i>lshost</i> file contained same settings as the LSHOST environment variable. However, the licensed application failed to follow the settings defined in the <i>lshost</i> file in the required order. The problem is corrected in this release. Now, the behavior is same as the LSHOST environment variable.	No
85004	In the case of stand-alone licensing, settings in the VLSsetFileName API should be given preference over the license file name specified using the LSERVOPTS environment variable. This behavior is checked in this release.	No

## Known Issues and Workarounds

This section contains the known problems for the product:

Known Problem	Workaround
In the case of RAID server, incorrect values may be obtained when hard disk serial number (0x800) is used as a locking criteria.	You may use the standard custom or extended custom lock selectors under such environments.
The lslic utility does not accept the license string that contains more than 256 characters. This problem is because of a limitation in the Solaris C run-time library.	Provide the license string as a commandline input. For example, <code>/lslic -A &lt; license_string&gt;</code>
<p>The echoid utility with '-d' switch generates double fingerprints for a system with single NIC. However, the strings generated are same.</p> <div data-bbox="233 800 899 894" style="border: 1px solid black; padding: 5px;">  Multiple NICs are not supported on Solaris currently.         </div>	Ignore any one of them.
The revocation password file ( <i>sntlpassword.dat</i> ) generated on Windows does not work on Solaris.	While generating the revocation password file using WlmAdmin, save the file as <i>sntlPassword.dat</i> (rename with Capital P) if that file is supposed to be transferred on a Solaris system.
Under certain scenarios, the rlftool tool may corrupt while saving the redundant License Manager's configuration file. The settings specified are lost and the error will be returned only in the next execution.	You can run the rlftool again and save the file back by making necessary modifications.
A redundant license is being requested like any other normal license from the follower License Managers when it has been removed from the leader License Manager.	None
A permission ticket generated in Windows uses a CRLF sequence, whereas in UNIX it uses only CR or LF. This may create a problem in Linux platforms when CRLF is read as two different characters.	Modify the ticket "permission_tkt" generated using following command: <code>perl -pi -e 's/\r\n/\n/g' permission_tkt</code>
The stand-alone revocation ticket generated in a non-Windows platform is not verified correctly in Windows if the "Lock Code Selector Value" provided at the time of permission ticket generation is 0x001 (ID-PROM).	For permission ticket generation use a "Lock Code Selector Value" that is supported on all platforms.
<p>The lastTime parameter used in the VLSgetServInfo API shall always be 0 if the contacted License Manager is Linux.</p> <p>lastTime is the data member of VLStimeTamperInfo structure. This structure is a part of the VLSservInfo structure filled by the above API call (VLSgetServInfo).</p>	None

## Compatibility and Upgrade Information

### Introduced Version 14 Licenses

Due to the introduction of aggregate licenses, a higher version of RMS licenses—version 14—is introduced.

### Backward Compatibility

The License Manager and licensing (client) libraries are backward compatible. However, applications licensed using RMS client libraries earlier than 8.5.1 will not be able to query or request version 14 aggregate licenses from the License Manager v8.5.1 (or later).

## Installation Information

This section contains following information about installation of the product:

- ["Before You Install..." on page 9](#)
- ["System Requirements" on page 10](#)
- ["Installation Instructions" on page 11](#)
- ["Installed Directories" on page 12](#)

### Before You Install...

Before you begin installing the RMS SDK, note the following:

#### *Administrator Privileges*

You must have Administrator privileges (root user) to successfully install all the components.

#### *RMS SDK Serial Number*

You require a valid serial number provided by SafeNet. The installer prompts you to enter the serial number specific to you.

#### *If Installing SDK in the Same Directory...*

If you are installing the SDK in the same directory where you installed a previous version, then note the following points:

- The installer will overwrite the files if the installation location on the system contains a previous version of the RMS SDK.
- The root directory of the new installation will take the same directory structure as that of the previous (installed) SDK.
- Any new files (such as the `\lib64` directory) will be copied on the installation location.
- Any file in use will not be updated. For example, you must stop the Sentinel RMS License Manager if running from the same installation directory. Else, the installer will not upgrade it.

#### *Check the Firewall Settings*

Allow the Sentinel RMS License Manager through the system firewall.

## System Requirements

To use the Sentinel RMS, the minimum hardware and software requirements are:

Hardware Requirements	Software Requirements
<b>Processor:</b> x86	<b>Operating Systems (for client and License Manager):</b> For 32-bit applications: Solaris x86 2.8, 2.9, 2.10, 2.11 For 64-bit applications: Solaris x86-64 2.8, 2.9, 2.10, 2.11
<b>Monitor and its Settings:</b> VGA monitor with 800 x 600 resolution (1024 x 768 resolution recommended)	<b>Compilers:</b> GCC Compiler v3.3.2 (32-bit) GCC Compiler v3.4.3 (64-bit) Libc v 1.0 (32-bit, 64-bit)
<b>Hard Disk Space:</b> 100 MB free hard disk space	<b>Java Runtime Environment:</b> Java Runtime Environment v1.5 or higher for the Java interface
<b>RAM:</b> 128 MB RAM	
<b>Disk Drive:</b> CD\DVD-ROM drive (required only if you received the RMS SDK installer on a CD\DVD)	



## Installation Instructions

1. Insert the Sentinel RMS CD in the appropriate drive of your computer (assuming that you received the RMS SDK installer on a CD).
2. Now, mount the CD using the mount command.
3. The software is packed in a .tar archive. Extract files from the archive as follows:

```
$tar -xvf s1m_0851_so12x86_combo_cdrom.tar
```
4. Change the directory to where the installation script *INSTALL.sh* exists. Type `sh INSTALL.sh` to start the installation.
5. Accept the license agreement to proceed with the installation.
6. You will be required to specify the Sentinel RMS serial number—included with the product packaging.
7. You will be required to choose whether you want to allow the License Manager to start automatically on system reboot.
8. If you allow this configuration, you will be required to reboot. However, if you do not allow this configuration, you will need to manually start the License Manager (from the */bin* directory) each time you reboot the system.

### Tip:

The Sentinel RMS is self-contained in its installation directory. To uninstall, remove the directory. Do stop the Sentinel RMS License Manager before uninstalling.

## Installed Directories

The following directories\files are installed:

Directory or File	Description
bin	Contains program files and utilities.
examples	Examples that illustrate the various features of Sentinel RMS.
include	The include files, which provide the prototypes for various Sentinel RMS library functions.
lib	The 32-bit licensing and system initialization libraries.
lib64	The 64-bit licensing and system initialization libraries.
Java	Contains the Java interface and related sample files.
Manuals	Contains the Sentinel RMS documentation.



- The samples are for C interface only.
- All libraries are non-reentrant and are compiled using the - pthread platform library.
- The binaries included in this release are built with the default GCC compilation options.
- The *\Manuals* directory in the installation contains the complete SDK documentation. However, for information specific to Solaris, refer to this document only.

## Documentation Resources

This section provides details about the additional documentation resources for the product.

### Developer's Guide

Contains the complete product overview, the necessary information for licensing and distributing the applications. Useful for developers planning and implementing licensing. To access, use the following ways:

- PDF and HTML versions installed on the system can be accessed using the Doc Access Page (.htm) in the *Manuals* directory.
- The latest online copy can be accessed here:  
<http://sentinelrms.safenet-inc.com/RMSDocumentation/Vendor/Default.htm>

### API Reference Guide

Contains details about all the API functions, including the licensing library, license code generator, system initialization, and so on. Useful for developers integrating the API functions in the code. To access, use the following ways:

- PDF and HTML versions installed on the system can be accessed using the Doc Access Page (.htm) in the *Manuals* directory.
- The latest online copy can be accessed here:  
<http://sentinelrms.safenet-inc.com/RMSDocumentation/Vendor/Default.htm>

### System Administrator's Guide

Contains details about using the system administration and License Manager configuration options. Useful for the System Administrator of the end user (on the customer site). To access, use the following ways:

- The HTML version installed on the system can be accessed using the Doc Access Page (.htm) in the *Manuals* directory.
- The latest online copy can be accessed here:  
<http://sentinelrms.safenet-inc.com/RMSDocumentation/SysAdmin/Default.htm>

## Technical Support

If you have questions or need additional assistance, please contact Technical Support using this information:

<b>Customer Connection Center (C3)</b>	
<a href="http://c3.safenet-inc.com">http://c3.safenet-inc.com</a>	
Existing customers with a Customer Connection Center account can log in to manage incidents, get latest software upgrades and access the complete SafeNet Knowledge Base repository.	
<b>Support and Downloads</b>	
<a href="http://www.safenet-inc.com/Support">http://www.safenet-inc.com/Support</a>	
Provides access to knowledge base and quick downloads for various products.	
<b>E-mail-based Support</b>	
support@safenet-inc.com	
<b>Telephone-based Support</b>	
United States	(800) 545-6608, (410) 931-7520
France	0825 341000
Germany	01803 7246269
United Kingdom	0870 7529200, +1 410 931-7520
Australia and New Zealand	+1 410 931-7520(Intl)
China	(86) 10 8851 9191
India	+1 410 931-7520 (Intl)