Sentinel® RMS

Release Notes

SafeNet®

Document Revision History

Part Number 007-009435-001, Revision K, Oct 2012

Disclaimer and Copyrights

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 un-authorized individuals.

Contents

Sentinel RMS v8.5.3 for Windows (32 and 64-bit) - Release Notes

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.

Usage Log File Enhancements

Introduced Log Comment Anonymization

The log comment data inserted by the vendor in various RMS APIs can be anonymized and represented as SHA-256 based unique hash in the usage logs using the anonymous logging option[1]

This is a two-way process:

- Vendor-end - The data needs to be pre-fixed by the <an> tag. The data following the <an> tag only will be shown anonymized in the usage logs.

- System Administrator-end - The system administrator needs to set up RMS License Manager to allow creation of anonymous usage logs using any of these options:

  - Using the LS_LOG_ANONYMITY Environment Variable

  - Using the `-log-anonymity` License Manager start-up option

To map the anonymous log comment data with the real values, the XML map file (till v8.5.2, used for mapping to real host and user names) has been updated. Its location is same as before, having the same name as the usage log file and the .xml extension.

Introduced Additional Transaction IDs in Usage Log

The License Manager usage log categorizes the various activities into transaction types (such as 0 transaction ID when a license is issued, 1 when a license is denied and so on). Earlier, 0 to 9 transaction IDs were used in the usage log to represent the all the transaction types. In this release, a new License Manager startup option `-extended-log` is introduced, which assigns additional transaction IDs—between 10 to 16—for specific cases in the usage log.

Inclusion of Log Comments in the Usage Log Entries

Earlier, only the application-invoked log entries (called as *explicit entries*) included log comments, if any inserted by your vendor in the API calls. Now, all the entries—including the License Manager generated entries (called as *implicit entries*)—in usage log will include log comments.

Further References

- Refer to the Sentinel RMS API Reference Guide for the specifications about log comment data anonymization and APIs that allow log comment data. You may search for "log_comment" keyword to find the APIs that allow log comment.

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[1]The anonymous logging option was introduced in the 8.5.1 Windows release for anonymizing the user and host name information rendered in the usage logs.

- Refer to the Sentinel RMS System Administrator's Guide for details on how to configure the License Manager start up options and transaction IDs.

License String Based Network License Revocation

Till now, network license revocation was limited to only the active licenses loaded for a feature-version. In this release, revocation of specific licenses for a feature-version is introduced. This is useful for revoking specific licenses, including:

- Specific licenses on a feature node consisting of multiple license (such as aggregate and additive licenses)

- Active and Inactive licenses

- Future date aggregate licenses

- Licenses not installed yet

Further References

Refer to the following topics in the "Chapter - License Revocation" of the Sentinel RMS Developer's Guide for more details:

- Timeline of License Revocation Methods Available in RMS

- Feature Based Revocation versus License String Based Revocation

Deferred License Revocation

It is now possible to incorporate a grace period with license revocation. This allows a revoke operation to be scheduled to some future point in time instead of performing the revoke operation in real-time. The grace period, known as the deferred revocation grace period, is defined by the vendor at the time of generating the permission ticket. It can be a value between 0 days (revocation happens instantaneously) and 30 days (revocation happens 30 days after it was actually instigated).

Further References

Refer to the topic "Deferred Revocation" in "Chapter - License Revocation" of the Sentinel RMS Developer's Guide for more details about this new feature.

Separate PT Generation and RT Verification Library

A separate permission ticket generation and revocation ticket verification library—lsptgen—is provided to allow segregation of these tasks from the license generation setup on vendor's end. This may be useful when on-the-fly execution of these tasks is required at the customer-end itself.

- Only 32-bit version of this library is available with this release.

- The APIs contained in the library are also available in the default license generation libraries.

> ■ The lsptgen library is linkable with the RMS licensing libraries.

Further References

Refer to the topic "lsptgen - PT Generation and RT Verification Library" in the "Chapter - License Revocation" of the Sentinel RMS Developer's Guide for more details about this new feature.

License Manager Hooking Provided for Pre/post Update Events

Earlier, License Manager customization options were provided only for license request and release. Now onward, you can also add pre and post update hooks by customizing the License Manager. These events will be triggered using the new update API VLSupdateExt.

List of APIs Introduced in This Release

The following new APIs are introduced in this release:

API	Description	Libraries
VLSgeneratePermissionTicketExt2	Generates permission ticket for: ■ Revoking network licenses using the license string based revocation method ■ Setting the deferred revocation grace period	■ *lsptgen32.lib (with MT flag)* lsptgen32.dll ■ *lscgen32.lib* ■ *lscgen32.dll*
VLSrevokeByPermissionTicketExt	Revokes a network license using the permission ticket generated using the VLSgeneratePermissionTicketExt2 API	lsapiw32.lib (with MT/MD/MDd flag) ■ lsapiw32.dll
VLSupdateExt	An advanced variant of the VLS_UPDATE \ LSUpdate APIs. It additionally returns the License Manager information during the license update process. This can also be used for triggering the "pre update" and "post update" hook events.	■ *lsapiw32.lib and lsapiw32.dll (all versions)* ■ *lsclws32.lib*

Documentation Enhancements

The following major documentation updates are included in this release:

> ■ Added a section in the corresponding chapters of the Sentinel RMS SDK Developer's Guide about the license properties supported by the following license types: grace, commuter, repository, and redundant.

- Revamped the documentation of persistence cleaning utilities in the "Appendix A - Persistence Data Using lsclean" of the Sentinel RMS SDK Developer's Guide. Now, the complete information about persistence cleaning and recovery is consolidated and included in this appendix. It also replaces the information given here in the developer's guide "Chapter 3 - Planning Application Licensing".

- Added details in the Sentinel RMS SDK Developer's Guide's license locking section for the local license locking criteria.

Problems Corrected in This Release

In this release, the following problems are corrected:

Service Request ID	Problem Description
158611	VLS_UPDATE returned success even when the License Manager was down.
158689	VLS_UPDATE returned success even when the license had expired.
162008	Incorrect RMS version displayed in the Application Event Viewer Log.
158354	WlmAdmin displayed incorrect sharing limit.
158366	The LSGetMessage API returned incorrect License Manager name.
158350	License release entry is missing in usage logs for some cases.
158503	WlmAdmin displayed incorrect token count for aggregated licenses in the case of redundant server setup.
158506	The License Manager shut down when an attempt is made to check out an aggregated redundant license.
159599	Incorrect behavior observed in the case of redundant server setup with regards to LSUpdate API and migration of clients.
159600	Incorrect behavior observed in the case of redundant server setup with regards to token count on WlmAdmin and license request.
172282 154452 159597 159060	Multiple entries in usage log were generated for license request and release APIs. These entries are now categorized into implicit and explicit log entries. See also: "Introduced Additional Transaction IDs in Usage Log"
159502	The log comment field was not updated for requests entries which are generated by the LSUpdate API. Log comments are available in the following update calls: LSUpdate, VLSupdateExt, and VLSbatchUpdate.
172392	The License Manager start up status messages in command-line did not display the complete message.
172106	Incorrect NumKeys value is displayed in the usage log file when new usage log file is created by the License Manager.
173224	Incorrect usage and timestamp shown in the usage log.

Installation Information

This section contains following information about installation of the product:

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Before You Install...

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

Administrator Privileges

You must have Administrator privileges 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.

Check the Firewall Settings

Allow the Sentinel RMS License Manager through the system firewall. You will be prompted for this during the installation.

System Requirements

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

Hardware Requirements	Software Requirements
Processors: x86 processors for 32-bit and x86-64 processors for 64-bit	**Operating Systems:** **License Manager Host:** ■ 32-bit versions of Windows Server 2003 and 2008 ■ 64-bit version of Windows server 2003, 2008, and 2008 R2 **Client Computer:** ■ 32-bit version of Windows XP, Vista, and 7 ■ 64-bit version of Windows XP, Vista, and 7 The RMS SDK is no longer supported on Windows 2000.
Monitor and its Settings: VGA monitor with 800 x 600 resolution (1024 x 768 resolution recommended)	**Compilers:** ■ Microsoft Visual Studio 6 for 32-bit ■ Microsoft Visual Studio 2005 for 64-bit ■ Microsoft Visual Studio 2008 for 32 and 64-bit ■ Microsoft Visual Studio 2010 for 32 and 64-bit
Hard Disk Space: 1150 MB free hard disk space Make sure that the "initial size (in MB)" allowed for "pagefile" per drive remains available after you have installed RMS. Else, the space crunch may affect your system's performance.	**Java Runtime Environment**: Java Runtime Environment v1.5 or higher for the Java interface
RAM: ■ 128 MB RAM on Windows XP and 2003 ■ 1 GB RAM on Windows Vista and other operating systems (recommended, else you might experience slower installation)	**Web Browser (for viewing Online Helps):** Internet Explorer 7.0 or later, Firefox 3.5 or later, Safari 4.0 or later, Google Chrome
■ **Peripherals:** A USB port or a parallel port to attach the license meter key. This is required on the system where licenses are to be generated.	**PDF File Viewer (for viewing PDF documents):** Adobe Acrobat 4.0 (or later)

Hardware Requirements	Software Requirements
▪ CD-ROM drive (required only if you received the RMS SDK installer on a CD).	

Installation Instructions

1. Double-click *StartHere.exe* from the root of the installation media. The Start Here screen appears.

2. Click Install under **Sentinel RMS Development Kit 8.5.3 Software**. The Welcome screen appears.

> If you are installing the RMS SDK using the steps mentioned here, you need not click the Install option under Sentinel RMS License Manager Installer. This option is for only installing the Sentinel RMS License Manager, which is automatically installed as a part of the SDK on your system.

3. Click Next. A screen showing the license agreement appears.

4. To proceed, accept the license agreement and click **Next**.

5. In the Customer Information dialog box, type your name, organization name, and the SDK serial number. This serial number is contained in the Sentinel RMS SDK product packaging and is unique for each developer. Entering this number customizes your SDK.

6. You may modify the SDK installation directory. The default installation directory is:

   - On 32-bit - *<OSdrive>:\Program Files\SafeNet Sentinel\Sentinel RMS Development Kit\<version>\English*

   - On 64-bit - *<OSdrive>:\Program Files (x86)\SafeNet Sentinel\Sentinel RMS Development Kit\<version>\English*

> The Custom installation option for the RMS SDK cannot be used on non-English operating systems. However, installation on the default path can be done successfully.

7. Choose the installation as **Complete** or **Custom**.

8. You are prompted for modifying the system firewall settings. Keep the checkbox selected to allow communication with the License Manager. This setting adds the License Manager in your system firewall's exceptions list. Clearing the checkbox blocks the communication with the License Manager (not recommended).

9. Follow the on-screen instructions to finish the installation.

10. When the installation is complete, the StartHere screen may reappear prompting you to license applications right away. However, use this option only if you want to license your executables and DLLs using the RMS CodeCover, a wizard-based automatic protection method.

Installed Directories

The following directories\files are installed:

Directory or File	Description
\MsvcDev	**The licensing (client libraries), header files, and source code for licensing and customization purpose**
\Include	The header files that provide prototypes for the licensing and license generator API functions.
\Lib\Win32\DLL	The dynamic libraries for the licensing API functions for 32-bit Windows. The supported compiler is Microsoft VS 6.0.
\Lib\Win64\DLL	The dynamic libraries for the licensing API functions for 64-bit Windows. The supported compiler is Microsoft VS 2005.
\Lib\Win64\DLL	The dynamic libraries for the licensing API functions for 64-bit Windows. The supported compiler is Microsoft VS 2005.
\Lib\Win64\Static	The static libraries for the licensing and license generator API functions for 64-bit Windows. The supported compiler is Microsoft VS 2005.
\Lib\MSVS2008\Win32\DLL	The dynamic libraries for the licensing API functions for 32-bit Windows. The supported compiler is Microsoft VS 2008.
\Lib\MSVS2008\Win32\Static	The static libraries for the licensing and license generator API functions for 32-bit Windows. The supported compiler is Microsoft VS 2008.
\Lib\MSVS2008\Win64\DLL	The dynamic libraries for the licensing API functions for 64-bit Windows. The supported compiler is Microsoft VS 2008.
\Lib\MSVS2008\Win64\Static	The static libraries for the licensing and license generator API functions for 64-bit Windows. The supported compiler is Microsoft VS 2008.
\Lib\MSVS2010\Win32\DLL	The dynamic libraries for the licensing API functions for 32-bit Windows. The supported compiler is Microsoft VS 2010.
\Lib\MSVS2010\Win32\Static	The static libraries for the licensing and license generator API functions for 32-bit Windows. The supported compiler is Microsoft VS 2010.
\Lib\MSVS2010\Win64\DLL	The dynamic libraries for the licensing API functions for 64-bit Windows. The supported compiler is Microsoft VS 2010.
\Lib\MSVS2010\Win64\Static	The static libraries for the licensing and license generator API functions for 64-bit Windows. The supported compiler is Microsoft VS 2010.
\Samples\API	The Microsoft VS 6.0 project workspaces for the applications contained in the \Client\Win32 directory. Also contains the workspaces for utilities, including lslic, lsmon, and lservdown.

Directory or File	Description
	The \MSVS2008\API and \MSVS2010\API directories contain similar workspaces for Microsoft VS 2008 and 2010, respectively.
\Samples\Customize components	The Microsoft VS 6.0 based source code for customizing the following requirements: Implementing additional encryption/decryption logic for the licenses generated. Implementing an additional layer for encrypting and decrypting the messages exchanged between the clients and the RMS License Server. Implementing the standard custom and extended custom locking criteria. Modifying the default implementation of time tampering (for network environments only). License Server hooking (for network environments only). The \MSVS2008\Customize components and \MSVS2010\Customize components directories contain similar source code for Microsoft VS 2008 and 2010, respectively.
\Demo	**The sample programs for evaluation**
\Client\Win32	The built applications for getting familiar with the Sentinel RMS API functions.
\Licenses\Network	The network licenses for the applications contained in \Client\Win32.
\Licenses\Standalone	The stand-alone licenses for the applications contained in \Client\Win32.
\MsvcDev\Samples\API	This is same as \Samples\API.
\MsvcDev\Include	The header files for the applications contained in \Client\Win32.
\MsvcDev\Lib\Win32\DLL	The dynamic libraries for the applications contained in \Client\Win32.
\MsvcDev\Lib\Win32\Static	The static libraries for rebuilding the samples.
\MsvcDev\Lib\Win64\DLL	The dynamic libraries for the licensing API functions for 64-bit Windows.
\MsvcDev\Lib\Win64\Static	The static libraries for the licensing and license generator API functions for 64-bit Windows.
\Interface	**The interfaces for license generation and network licensing**
\COMObjects\LicGenCOM	The license generation API interface for the COM component. Also contains example programs in Visual C++ and Visual Basic.
\Java	The pure Java interface for network licensing.
\RMS-CodeCover	**The files for the automatic CodeCover protection**
\CodeCoverSDK	The component used with the RMS CodeCover for protecting sensitive data in your application code against memory dumps and reverse engineering attacks.
\Tools	**The Sentinel RMS tools to generate license codes and customize your application with the developer-defined data**
\distctrl	The distribution control program that allows you to create a Win-

Directory or File	Description
	dows license code generator for your product distributors.
\Delivery	**The utilities and files for your customers**
\Admin.net\Win32	The utilities for network licensing.
\Admin.Sta\Win32	The utilities for stand-alone licensing.
\Server\Setup	The installation program for the RMS License Manager and Sentinel System Driver.
\Your_App\Win32	The utilities for commuter licenses.
\Manuals	**The documentation for the Sentinel RMS SDK**
Sentinel RMS SDK Documentation Access Page.html	The page for accessing the Sentinel RMS SDK documentation, including the online guides.

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

> The Developer's Guide and API Reference Guide are bundled together as the Vendor's documentation. You can find it as the last item in its ToC (in the left-side pane).

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

Specific Documentation (Windows Applications)

- WlscGen Help - Contains details about using the Windows License Generator. Useful for developers generating licenses using WlscGen.

- CodeCover Help - Contains details about using the Windows CodeCover wrapper protection (for executables and DLLs). Useful for developers using CodeCover to license applications.

Technical Support

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

Customer Connection Center (C3)	
http://c3.safenet-inc.com 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.	
Support and Downloads	
http://www.safenet-inc.com/Support Provides access to knowledge base and quick downloads for various products.	
E-mail-based Support	
support@safenet-inc.com	
Telephone-based Support	
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)