

Sentinel[®]RMS

Sentinel RMS v8.6.0 for Windows (32 and 64-bit)
Release Notes



Document Revision History

Part Number 007-009435-001, Revision P, September 2014

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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 v8.6.0 for Windows (32 and 64-bit) - Release Notes

About This Document

This document contains details about the new features and installation of the product.

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.

Introduced Vendor-specific Isolated License Managers

You can now provide isolated License Manager to your customers. An isolated License Manager is a customized License Manager that has the following features:

- It can host licenses for a specific vendor only.
- It can coexist with the generic License Manager and other vendor's isolated License Manager on the same host
- The isolated License Manager are to be created by vendors by performing customizations in the vendor-specific isolated License Manager library. This is a new 32-bit static library available at the following path:
<installdir>\MsvcDev\Lib<compiler>\Win32\Static\IsolatedServer.
- A new API `VLSenableVendorIsolation` is provided for assigning a vendor identifier to the isolated License Manager. Also, the API `VLSrequestExt2` has been updated to include the vendor identifier parameter.

For more information about the isolated License Managers, refer to the "Chapter - Isolated License Managers" of the Sentinel RMS SDK Developer's Guide.

Introduced Custom Persistence Device (CPD)

In this release, the Custom Persistence Device (CPD) interface is introduced. Using the CPD, vendors can choose custom devices, locations, or databases to store RMS persistence data. By default, persistence data is managed completely by the RMS components. The CPD interface allows vendors to implement a persistence storage approach of their choice. Some examples of persistence storage options are:

- External SQL database
- Data store in the cloud
- Secure memory area of a hardware key
- Hidden/non-OS disk areas

To support custom persistence device, the following changes are introduced:

- Certain Sentinel RMS libraries are enhanced to expose the CPD Configuration API layer. These functions—in the respective libraries and License Manager—determine whether a CPD handler routine defined by the vendor will be used to store the persistence data as opposed to the RMS-managed default persistence scheme. The below table lists them:

API	Library
<code>sntlSetPersistenceDevice</code>	System Initialization
<code>VLSsetPersistenceDevice</code>	<ul style="list-style-type: none"> ■ Licensing

API	Library
	<ul style="list-style-type: none"> Isolated License Manager
VLScleanSetPersistenceDevice	Persistence Cleaning

- Addition of CPD interface callback APIs (in the header file *lscpdif.h*). The implementation of interface callback APIs is done by vendors for reading, writing or deleting the persistence data records.
- A typical implementation of interface callback APIs is defined in the sample program “*cpd_sqlite.c*”.

For more information, refer to the "Chapter: Custom Persistence Device" in the Sentinel RMS SDK Developer's Guide.

RMS Licenses Supported Beyond Year 2038

In this release, the Sentinel RMS licenses and licensing operations have been updated to provide a solution of the “Year 2038” problem.

Prior to this release, Sentinel RMS used 32-bit integer datatype (*time_t*) to process the time in seconds. Based on that limit, it was not possible to have licenses of validity beyond the year 2038. To resolve this problem, the following changes are included:

- New datatypes introduced:
 - A new 64-bit datatype (*Time64_T*) is used in addition to the existing 32-bit member. The 64-bit time members can carry EPOCH time values beyond the year 2038.
 - The existing 32-bit time member’s data type *time_t* is also changed to *Time_T* to decouple the width of datatype from the Microsoft specific time flag *_USE_32BIT_TIME_T*.

For definition of datatypes, refer to the header file *lserv.h*.

- To maintain backward compatibility, the following APIs are introduced (or updated) to make use of the 64-bit datatypes. Refer to the *lserv.h* for API signatures:

API	Reference in the Sentinel RMS SDK API Reference Guide
VLSgetClientInfoExt2	<i>Chapter 1: Sentinel RMS Licensing Library API</i>
VLSgetQueuedClientInfoExt	<i>Chapter 6: License Queuing API</i>
VLSupdateQueuedClientNew	<i>Chapter 6: License Queuing API</i>

- Changes done in following data structures to make use of *Time64_T* and *Time_T*. Refer to *lserv.h* for the data structure definitions:

Changed Data Structures	Reference in the Sentinel RMS SDK API Reference Guide
VLSlicenseInfo	<i>Chapter 1: Sentinel RMS Licensing Library API (Topic “The Client Query Functions”)</i>

Changed Data Structures	Reference in the Sentinel RMS SDK API Reference Guide
VLSfeatureInfo	<i>Chapter 1: Sentinel RMS Licensing Library API (Topic “The Feature Query Functions”)</i>
VLSclientInfo	<i>Chapter 1: Sentinel RMS Licensing Library API (Topic “The Client Query Functions”)</i>
VLSservInfo	<i>Chapter 1: Sentinel RMS Licensing Library API (Topic “Getting the License Manager Information”)</i>
VLStimeTamperInfo	<i>Chapter 1: Sentinel RMS Licensing Library API (Topic “Getting the License Manager Information”)</i>
VLSqueuedClientInfo	<i>Chapter 6: License Queuing API (Topic “VLSqueuedClientInfo Struct”)</i>

- A new structure VLStimeTamperInfo64 is introduced with the time data members of type Time64_T. This is a 64-bit version of the existing structure VLStimeTamperInfo. For more details about the VLStimeTamperInfo64 structure, refer to the topic “Getting the License Manager Information” of the “Chapter 1: Sentinel RMS Licensing Library API” in the Sentinel RMS SDK API Reference Guide.
- All tools and utilities have been updated to support time beyond year 2038.

License Generator Related Enhancements

In this release, the following license generation related changes are included:

License Generator Components Separated from the SDK

From v8.6.0 onward, all the License Generator components are separated from the RMS SDK ISO. However, these can be obtained on-demand basis from the [Technical Support](#).

Here is a list of affected components that existed in the SDK up to v8.5.5:

This following directory and its sub-directories are no longer included in the SDK
■ <i>\English\Interface COMObjects</i>
The following files are no longer included in the SDK
■ <i>\English\MsvcDev\Lib\MSVS2008\Win32\DLL\lscgen32.dll</i>
■ <i>\English\MsvcDev\Lib\MSVS2008\Win32\DLL\lscgen32.lib</i>
■ <i>\English\MsvcDev\Lib\MSVS2008\Win32\Static\lscgen32.lib</i>
■ <i>\English\MsvcDev\Lib\MSVS2008\Win32\Static\MD\lscgen32.lib</i>
■ <i>\English\MsvcDev\Lib\MSVS2010\Win32\Static\MD\lscgen32.lib</i>
■ <i>\English\MsvcDev\Lib\MSVS2012\Win32\Static\MD\lscgen32.lib</i>
■ <i>\English\MsvcDev\Lib\MSVS2010\Win32\DLL\lscgen32.dll</i>
■ <i>\English\MsvcDev\Lib\MSVS2010\Win32\DLL\lscgen32.lib</i>
■ <i>\English\MsvcDev\Lib\MSVS2010\Win32\Static\lscgen32.lib</i>

■ <code>\English\MsvcDev\Lib\MSVS2012\Win32\DLL\lscgen32.dll</code>
■ <code>\English\MsvcDev\Lib\MSVS2012\Win32\DLL\lscgen32.lib</code>
■ <code>\English\MsvcDev\Lib\MSVS2012\Win32\Static\lscgen32.lib</code>
■ <code>\English\Tools\cgentmpl.net</code>
■ <code>\English\Tools\cgentmpl.sta</code>
■ <code>\English\Tools\lscgen.exe</code>
■ <code>\English\Tools\lscgen.exe.manifest</code>
■ <code>\English\Tools\ulscgen.exe</code>
■ <code>\English\Tools\ulscgen.exe.manifest</code>
■ <code>\English\Tools\Wlscgen.chm</code>
■ <code>\English\Tools\Wlscgen.exe</code>
■ <code>\English\Tools\Wlscgen.exe.manifest</code>
The following files are no longer included in the SDK. The complete <code>/MDd</code> folder is removed.
■ <code>\English\MsvcDev\Lib\MSVS2008\Win32\Static\MDd\lscgen32.lib</code>
■ <code>\English\MsvcDev\Lib\MSVS2010\Win32\Static\MDd\lscgen32.lib</code>
■ <code>\English\MsvcDev\Lib\MSVS2012\Win32\Static\MDd\lscgen32.lib</code>

Introduced 64-bit License Generator Libraries

The 64-bit license generator libraries are now also available. The compiler supported is MSVS 2008.



The new libraries are not included in RMS SDK ISO. These will be distributed separately on-demand basis. Please contact [Technical Support](#) to obtain them.

Introduced Version 15 Licenses

A higher version of RMS licenses—version 15—is introduced in this release. This is because the PIII processor ID is no longer supported for license locking purposes.

New Compilers Support for the Isptgen Library

The PT Generation and RT Verification Library (Isptgen) now supports the following compilers: VS2008, VS2010 and VS2012.

Removed Support for MSVC 6 and MSVS 2005 Compilers

The following compilers are no longer supported:

- Microsoft VC 6
- Microsoft Visual Studio 2005

The corresponding libraries have also been removed from the installation.

- If your existing implementation is using a deprecated compiler, modify it to use a supported compiler version.
- Use a supported compiler for new implementations.

Extended Usage Log File Enhancements

The following extended usage log file (generated using the License Manager start-up option - `extended-log`) related enhancements are included in this release:

Introduced Additional Transaction IDs

In this release, the extended usage log is enhanced to assign additional transaction IDs 17 and 18 for specific cases related to the request and release of a shared license token. Refer to the Sentinel RMS SDK System Administrator's Guide for details about the transaction IDs.

Client Request Identification

In this release, the extended usage log includes a Client Request identifier (a 16-byte value) that uniquely identifies each client request. Using this identifier, each request log entry can be mapped with the corresponding release log entry.

Refer to the *Sentinel RMS SDK System Administrator's Guide* for details about the usage log related information, including these enhancements.

Allowed Retrieval of Client Specific Log Comments

Earlier, the retrieval of log comments passed using the request, update or checkout APIs was not supported. In this release, the `client_log_comment` member of the `VLSclientInfo` structure is being used for retrieving the client specific log comments.

You can use the following APIs for retrieving the log comments: `VLSgetClientInfo`, `VLSgetClientInfoExt`, and `VLSgetClientInfoExt2`.

For more information, refer to the "Chapter 1 - Sentinel RMS Licensing Library API" of the *Sentinel RMS SDK API Reference Guide*.

Problems Corrected in This Release

In this release, the following problems are corrected:

User Story ID	Problem Description
RMS-2318	Enhancements in the persistence data module.
RMS-1728	Performance degradation - unusually high number of page faults in RMS Library
RMS-2321	The stub installer file lsinitstub.exe is invalid.
RMS-1327	Remove "Developer Kit" picture in RMS server installer for end-users
RMS-1558	RMS 8.5.1/8.5.3 WrlfTool does not show proper error message
RMS-2552	Valgrind warnings in Virtual Machine detection module
RMS-1180	RMS License Manager installation issues
RMS-2616	Request for adding more parameter for firewall setting when installing RMS License Manager
RMS-2603	Some API calls are returning VLS_RESOURCE_LOCK_FAILURE
RMS-2040	Documentation update - better distinction between Windows and non-Windows
RMS-2754	Confusing Developer's/API Guide documentation about Autotimer
RMS-2755	Documentation incorrect about Server Port Change
RMS-1332	VLSgeneratePermissionTicketExt() documentation error
RMS-3531	Invalid license string error while rebuilding the License Decoding Utility with license encryption
RMS-3529	When you rebuild the License Manger and load an encrypted license file, the License Manager crashes.
RMS-3430	Compatibility issues (Remote commuter checkout) among RMS 8.2 and RMS 8.5
RMS-3028	License registration problem on Windows
RMS-2945	Crash in revocation tool while decoding the revocation ticket (using the Sentinel Caffé API VLScgDecodeLicenseRevocationTicketExt)
RMS-2944	Issue in VLSusageAuthenticate API related to MappinXML file
RMS-2937	Crash in VLSusageAuthenticate , VLSusageFileDecrypt and vusage tools while parsing a usage log file that contains log comments with six or more anonymized words.
RMS-2933	The Wechoid tool returns a different hard disk serial number on Windows 8
RMS-2641	Enhancement request in Group feature attribute
RMS-2640	VLSgetNumberedMachineID API crashes when called 5 times.
RMS-2637	Increase license limit from 1000 to 2000

User Story ID	Problem Description
RMS-2611	The LSHOST value is getting Reset
RMS-2258	The VLSusageFileDecrypt API does not provide Session ID in CSV file

Installation Information

This section contains following information about installation of the product:

- ["Before You Install..." on page 14](#)
- ["System Requirements" on page 15](#)
- ["Installation Instructions" on page 16](#)
- ["Installed Directories" on page 17](#)

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
<p>Processors:</p> <ul style="list-style-type: none"> ■ x86 processors for 32-bit ■ x86-64 processors for 64-bit 	<p>Operating Systems:</p> <ul style="list-style-type: none"> ■ 32-bit version of Windows Vista, 7, 7.1, 8 (Desktop mode), 8.1, Windows Server 2008, and 2012. ■ 64-bit version of Windows Vista, 7, 7.1, 8 (Desktop mode), 8.1, Windows Server 2008, 2012 and 2012 R2.
<p>Monitor and Settings: VGA monitor with 800 x 600 resolution (1024 x 768 recommended)</p>	<p>Compilers:</p> <ul style="list-style-type: none"> ■ Microsoft Visual Studio 2008 Professional edition v9.0.30729.1 SP - For 32 and 64-bit ■ Microsoft Visual Studio 2010 Professional edition v 10.0.30319.1 RTMRel - For 32 and 64-bit ■ Microsoft Visual Studio 2012 Professional edition v 11.0.60610.01 Update 3 - For 32 and 64-bit
<p>Hard Disk Space: Approximately 1.3 GB free hard disk space</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">  <p>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.</p> </div>	<p>Java Runtime Environment: Java Runtime Environment v1.5 for the Java interface</p>
<p>RAM:</p> <ul style="list-style-type: none"> ■ 2 GB RAM on Windows 7, Windows 8 (Desktop mode) for 64-bit and Windows 2012 ■ 1 GB RAM on all other 	<p>Web Browser (for viewing HTML Helps):</p> <ul style="list-style-type: none"> ■ Internet Explorer 7.0 or later ■ Firefox 3.5 or later ■ Google Chrome
<p>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.</p>	<p>PDF File Viewer (for viewing PDF documents): Adobe Acrobat 4.0 (or later)</p>

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 8.6.0 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 check box selected to allow communication with the License Manager. This setting adds the License Manager in your system firewall's exceptions list. Clearing the check box 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 are installed:

Directory	Description
\MsvcDev	The licensing (client libraries), header files, and source code for licensing and customization purpose
\Demo	The sample programs for evaluation
\Interface	The interfaces for network licensing
\RMS-CodeCover	The files for the automatic CodeCover protection
\Tools	The Sentinel RMS tools to customize your application with the developer-defined data.
\Delivery	The utilities and files for your customers
\Manuals	Documentation for the Sentinel RMS SDK

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)

- 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

You can contact us using any of the following options:

- **Business Contacts** - To find the nearest office or distributor, use the following URL:
<http://www.safenet-inc.com/contact-us/>
- **Technical Support** - To obtain assistance in using SafeNet products, feel free to contact our Technical Support team:
 - Phone: 800-545-6608 (US toll free), +1-410-931-7520 (International)
 - E-mail: support@safenet-inc.com
 - URL: <http://sentinelcustomer.safenet-inc.com/sentinelsupport/>
- **Downloads** - You may want to check out updated installers and other components here:
www.sentinelcustomer.safenet-inc.com/sentineldownloads/

