**Sentinel** *HASP* ®

Sentinel HASP – v.5.10
Installation Guide

**SafeNet**®

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*EMC directive 89/336/EEC and related standards EN 55022, EN 50082-1.

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FCC authorities have determined that HASP is not a Class B Computing Device Peripheral and therefore does not require FCC regulation.

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**Sentinel** *HASP*®

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## Part 2    Installing Sentinel HASP Business Studio Server

# Part 3   Appendixes

# Introduction

This guide describes how to install Sentinel HASP—including the Sentinel HASP Vendor Suite software and the Sentinel HASP Business Studio Server.

## About This Guide

The guide is divided into three parts.

■ **Part 1—Installing the Sentinel HASP Software**

Defines the prerequisites for installing Sentinel HASP, and explains how to install Sentinel HASP Vendor Suite on a Windows operating system. Instructions are provided for installing the Sentinel HASP Run-time Environment. Also describes how to introduce your Sentinel HASP Vendor keys to the Sentinel HASP system.

■ **Part 2—Installing Sentinel HASP Business Studio Server**

Defines the installation prerequisites and explains how to install and configure the Sentinel HASP Business Studio Server. Describes installation options for the Sentinel HASP Business Studio Server on a single machine or using a network environment. Lists frequently asked questions for the Sentinel HASP Business Studio Server and their solutions.

■ **Part 3—Appendixes**

Discusses additional topics, including how to download and install language packs to display Sentinel HASP Vendor Suite and utilities in languages other than English, and how to uninstall Sentinel HASP.

# Obtaining Support

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http://www.safenet-inc.com/Contact-Us.aspx

# Training

For additional information and training about Sentinel HASP implementation issues, contact our team of international consultants at the URL provided above. The consultants can provide you with tailored training sessions on the following:

- Integration of Sentinel HASP into your product
- Analysis of the best protection strategy for your applications
- Assistance in implementation of your protection and licensing models

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**SentinelHASP®**

# Part 1    Installing the Sentinel HASP Software

**Part 1 contains:**

■ Chapter 7: Introducing Your Sentinel HASP Vendor Keys to the Sentinel HASP System

Describes how to connect your Sentinel HASP Vendor keys to the Sentinel HASP system to enable use of Sentinel HASP Vendor Suite.

# Sentinel HASP Installation Prerequisites

This chapter describes the prerequisites for installing Sentinel HASP, and the Sentinel HASP software package.

**In this chapter:**

- Supported Platforms
- Sentinel HASP Software Package

## Supported Platforms

This section lists the supported platforms for Sentinel HASP. It includes information for Windows, Mac, and Linux operating systems.

**Note:**

To see the most recent information on supported platforms, it is recommended that you go to the following URL:
http://www3.safenet-inc.com/hasp/srm-platform-support.aspx

### Windows

The following operating systems are supported:

- **Sentinel HASP Run-time Environment**:
    - (32-bit and 64-bit) Windows XP, Windows Server 2003, Windows Vista, Windows 2008, Windows 7
    - (32-bit only) Windows XP Embedded and Windows 2000

Sentinel HASP Run-time Environment has been has been certified by Microsoft as "Compatible with Windows 7" (32-bit and 64-bit). To view the certification on the Microsoft web site, go to:

http://www.microsoft.com/windows/compatibility/windows-7/en-us/Details.aspx?type=Software&p=Sentinel%20HASP%20Run-time&v=SafeNet%2c%20Inc&uid=5&pf=0&pi=1&s=sentinel&os=32-bit

- **Sentinel HASP Vendor Tools**:
    - ♦ (32- and 64-bit) Windows XP, Windows Server 2003, Windows Vista, Windows 2008, Windows 7
- **Sentinel HASP Business Studio Server**:
    - ♦ (32- and 64-bit) Windows XP, Windows Server 2003, Windows Vista, Windows 2008, Windows 7
    - ♦ **Database**: One of the following:
        – Microsoft SQL Server 2005
        – Microsoft, SQL Server 2005 Express Edition (must be enabled for remote connections)
        – Microsoft SQL Enterprise 2008 x32/x64

**Note:**
If you want, Microsoft SQL Server 2005 Express Edition can be installed automatically by the Sentinel HASP Business Studio Server Installation wizard.

## Mac

The following operating systems are supported:

- **Sentinel HASP Run-time Environment and Vendor Tools:**
    - ♦ Mac OS X 10.4.11, 10.5.8, 10.6.2

## Linux

The following operating systems are supported:

- **Sentinel HASP Run-time Environment and Vendor Tools:**
    - ♦ Linux SUSE Enterprise Server 10 and 11 (x86 and x86_64)
    - ♦ OpenSUSE 11.2 (x86 and x86_64)

- ◆ RedHat EL5.4 (x86 and x86_64)
- ◆ Ubuntu Desktop 8.04 and 10.04 (x86 and x86_64)
- ◆ Ubuntu Server 10.04 (x86 and x86_64)
- ◆ Debian 5.04 (x86 and x86_64)

# Sentinel HASP Software Package

The following software is provided on your Sentinel HASP installation DVD:

- ■ Sentinel HASP Vendor Suite
  - ◆ Sentinel HASP Envelope

    Applies security to your software within a protective shield. Available for Windows, Mac, and Linux platforms.
  - ◆ Sentinel HASP Business Studio

    A server application that enables you to define, produce and update your software licenses, and to initialize memory in Sentinel HASP protection keys.
  - ◆ Sentinel HASP ToolBox

    Enables you to familiarize yourself with the Sentinel HASP Run-time API and to generate code to include in your software's source code.

- ■ Sentinel HASP Run-time API Samples

  Enables you to integrate protection into your own software using a variety of programming languages.

- ■ Sentinel HASP Run-time Environment

  Sentinel HASP Run-time Environment is the main link between a Sentinel HASP protection key and a protected application following its deployment at a customer's site. End users must have Sentinel HASP Run-time Environment installed in order to run the protected application.

You can integrate the Sentinel HASP Run-time Environment installer into the installation of your protected application.

♦ Sentinel HASP Run-time Environment for Windows

  ♦ Provided via Windows Update for Windows XP and above.

  ♦ Certified for Windows Vista. To certify your protected software for Windows Vista, it is recommended that you give preference to the MSI run-time installer over other available run-time installers.

  ♦ Enables you to customize your Sentinel HASP Run-time API on Windows. Sentinel HASP Admin Control Center is integrated in the Windows run-time.

♦ Sentinel HASP Run-time Environment for Mac

  ♦ Provides backward compatibility with HASP HL v.1.x and HASP4 for Sentinel HASP Run-time and the Sentinel HASP Run-time API static library.

  ♦ Enables you to customize your Sentinel HASP Run-time API on Mac. Sentinel HASP Admin Control Center is integrated in the Mac Run-time.

♦ Sentinel HASP Run-time Environment for Linux

  ♦ Includes script and RPM (for SuSE and RedHat) installation options.

  ♦ Provides backward compatibility with HASP HL v.1.x, HASP4, and Hardlock for Sentinel HASP Run-time and the Sentinel HASP Run-time API static library.

  ♦ Enables you to customize your Sentinel HASP Run-time API on Linux. Sentinel HASP Admin Control Center is integrated in the Linux Run-time.

■ Sentinel HASP APIs

  ♦ Sentinel HASP Run-time API

  Enables you to protect your application by inserting calls to a Sentinel HASP protection key throughout your source code.

The root directory on the Sentinel HASP installation DVD is divided according to operating systems. Each system folder contains a `Sample` folder that provides samples for various compilers and programming languages. Each sample includes:

- ◆ Libraries that must be linked to your application
- ◆ A sample application that demonstrates the use of the API

◆ Activation API

Used in conjunction with various Sentinel HASP Run-time API functions to communicate with the Sentinel HASP Business Studio Server to integrate the product activation process into your software.

◆ Sentinel HASP Business Studio Server API

Enables you to integrate the orders and production functionality of Sentinel HASP Business Studio in your organizational management software.

■ Sentinel HASP Admin Control Center

Sentinel HASP Admin Control Center is a customizable, Web-based, end-user utility that enables centralized administration of HASP License Managers and Sentinel HASP protection keys.

Use Sentinel HASP Admin Control Center to monitor licenses and sessions when a protected application is operating, and to manage detachable licenses.

**Chapter 2**

# Installing Sentinel HASP Vendor Suite Software for Windows

This chapter describes how to install the Sentinel HASP Vendor Suite software, together with the automatic Sentinel HASP Run-time Environment installation.

**In this chapter:**

- Installing the Sentinel HASP Vendor Suite Software
- Installation Directory Structure
- Installing the Business Studio API as a Web Service

## Installing the Sentinel HASP Vendor Suite Software

Follow the instructions below to install Sentinel HASP on a machine with a Windows operating system.

**To install Sentinel HASP:**

1. Ensure that you do not have any Sentinel HASP Vendor keys or HASP HL keys connected to your machine.
2. Insert the Sentinel HASP Installation DVD into your machine. The Sentinel HASP Setup Wizard launches automatically.
3. Follow the window instructions to install the contents of the DVD.

4. If you are using HASP HL keys, connect a key.
5. Connect the Sentinel HASP Master key to the machine on which the Sentinel HASP Business Studio Server is installed.

**Note:**

Sentinel HASP Run-time Environment is installed automatically when you install Sentinel HASP according to the procedure just described. If for any reason the installation does not launch automatically, run `setup.exe` from the Windows directory on the DVD.

### Default Sentinel HASP User Name and Password

The default login user name and password for Sentinel HASP Vendor Suite applications is **HASP**.

# Configuring Vendor Tools to Log in Through a Proxy Server

You can configure the Windows environment so that Vendor Tools (including Business Studio) use a proxy server to log in to Sentinel HASP Business Studio Server.

**To configure the use of a proxy server:**

■ On each computer where Sentinel HASP Vendor Suite is installed:
1. Start Internet Explorer.
2. From the menu bar, select: **Tools > Internet Options > Connections**.
3. Click **LAN Settings**.
4. In the Proxy Server pane, select the check box **Use a proxy server for your LAN**.
5. Modify the **Address** and **Port** fields as required for your proxy server.

# Installation Directory Structure

When Sentinel HASP is installed on your computer, three main directories are installed, as follows:

- Sentinel HASP program files are located in subdirectories under the …\Program Files\SafeNet\Sentinel HASP\ directory, as detailed in *Sentinel HASP Subdirectories* on page 29.

- Files that are generated using Sentinel HASP applications are located in subdirectories under the …\Documents and Settings\[*logged_in_user_name*]\My Documents\ Aladdin\Sentinel HASP [*version*]\ directory, as detailed in *Sentinel HASP Subdirectories* on page 29.

  For Windows Vista users, the directory path is

  …\Users\[*logged_in_user_name*]\Documents\Aladdin\Sentinel HASP [*version*]\

  These files include Vendor Codes, Sentinel HASP Envelope Projects and protected applications, C2V and V2C files, generated APIs and samples, and additional material.

- Sentinel HASP ToolBox templates are located in subdirectories under the …\Documents and Settings\[*logged_in_user_name*]\Application Data\ Aladdin\Sentinel HASP [*version*]\VendorTools\VendorSuite directory, as detailed in *Sentinel HASP Subdirectories* below.

  For Windows Vista users, the directory path is

  …\Users\[*logged_in_user_name*]\AppData\Roaming\Aladdin\Sentinel HASP [*version*]\

## Sentinel HASP Subdirectories

Depending on the directory selected, the following subdirectories may be available:

- **API**: Contains the API libraries
- **Docs**: Contains a digital version of this guide, plus supplementary documentation for using Sentinel HASP
- **Redistribute**: Contains the software to be deployed at the end user's site. For additional information, see the description of end user software in the *Sentinel HASP Software Protection and Licensing Guide*.
- **Run-time Environment**: Contains Sentinel HASP Run-time Environment. For additional information, see *Installing Sentinel HASP Run-time Environment Using an Installation Utility* on page 47.

- **Samples**: Contains sample applications for various programming languages and interfaces
- **VendorCodes**: Contains the Batch Codes that represent your confidential Vendor Code for your Sentinel HASP protection keys
- **VendorTools**: Contains Sentinel HASP Vendor Suite and related utilities

**Note:**

The setup structure described above mirrors the setup of the Sentinel HASP installation DVD under the **Windows/Installed** directory.

# Installing the Business Studio API as a Web Service

You can install the Sentinel HASP Business Studio API as a Web Service, either on the computer where you installed Sentinel HASP or on a separate computer in the same network. This simplifies the process of writing your own applications that make use of the functions supported by the Business Studio API.

This section describes the prerequisites and the procedure for performing this installation.

## Ensure Prerequisites

The computer on which you install the Business Studio API as a Web Service must satisfy the following prerequisites:

- Microsoft .NET Framework version 2.0 or later
- Windows Internet Information Services (IIS) version 5.0 or later
- Windows MSI Installer

When you launch the setup executable, the application checks to ensure that the prerequisites are installed.

- If the presence of the .NET Framework and MSI Installer is not detected, these components are automatically downloaded and installed.
- If the IIS component is not detected, you are prompted to install it manually, and the setup application terminates.

## Configure IIS

Depending on the operating system of the computer on which you plan to install the Business Studio API, if you have installed IIS 7 or IIS 7.5, the following configuration is required to enable compatibility with the IIS 6 metabase:

- Windows Vista: Under **Programs & Features**, go to **IIS > Web Management Tools > IIS 6 Management Compatibility** and select **IIS Metabase & IIS 6 Configuration Compatibility.**
- Windows 7: Under **Programs & Features**, go to **Turn Windows features on or off > Internet Information Services > Web Management Tools > IIS 6 Management Compatibility** and select **IIS Metabase and IIS 6 configuration compatibility.**
- Windows 2008 Server:
  1. Under **Programs & Features**, go to **Turn Windows features on or off**.
  2. In the Server Manager screen - **Roles Summary** pane, click **Go to Roles > Add Roles**.
  3. In the Add Roles wizard, click **Server Roles** in the navigation panel.
  4. Select the **Web Server (IIS)** check box.
  5. Click **Add Required Features**.
  6. Click **Next**.
  7. Click **Next**.
  8. Select **IIS 6 Management Compatibility**.
  9. Click **Next**.
  10. Click **Install**.

## Install the Business Studio API

**To install the Sentinel HASP Business Studio API as a Web service:**

1. Start the Business Studio API installer by navigating to one of the following locations:
   - From the Sentinel HASP installation DVD:
     Windows\Installed\API\BusinessStudioServer\WebSetup
   - From a Sentinel HASP installation:
     ...\Program Files\SafeNet\Sentinel HASP\API\BusinessStudioServer\WebSetup

   Double-click `setup.exe`.

The installer confirms the presence of all prerequisites.

2.  Proceed through the installation wizard. You can accept all
    defaults or make changes as required.

3.  (Optional) Confirm that the Web service was installed correctly by
    accessing the following URL:

    http://localhost/BusinessAPI/BusinessAPIService.asmx

    If a page describing the Sentinel HASP Business Studio API is
    displayed, the Web Service was installed correctly.

<span style="color:orange">**Chapter 3**</span>

# Installing Sentinel HASP Run-time Environment for Windows Embedded

This chapter provides the procedures for installing the Sentinel HASP Run-time Environment in a Windows Embedded Standard 7 or Windows PE image. Installation can be done in different ways according to the image (online or offline) where you want to install the Run-time Environment.

Microsoft does not support creating your own packages for Windows Embedded Standard 7. Therefore, SafeNet is not able to provide a Windows Embedded Standard 7 driver package.

The driver files required for the procedures below can be found in the Sentinel HASP installation, under:
…\Program Files\SafeNet\Sentinel HASP\Runtime Environment\

**In this chapter:**

■   Installing in an Offline Windows Embedded Standard 7 or Windows PE Image

■   Installing in an Online Windows PE Image

■   Installing in Windows Embedded Standard 7 Using the Distribution Share

# Installing in an Offline Windows Embedded Standard 7 or Windows PE Image

You can use the Deployment Image Servicing and Management (DISM) tool to add a device driver (`.inf` file) to an offline image of Windows Embedded Standard 7 or Windows Preinstallation Environment (Windows PE) 3.0.

**To install the Sentinel HASP Run-time Environment drivers in an offline Windows Embedded Standard 7 or Windows PE image:**

1. Mount the base Windows PE image to a local directory by using the DISM tool. For example:

```
dism /Mount-WIM /WimFile:c:\winpe_x86\winpe.wim /index:1
/MountDir:c:\winpe_x86\mount
```

2. Add the `.inf` file to the base Windows PE image by using the **/Add-Driver** option. For example:

```
dism /image:c:\winpe_x86\mount /driver:c:\drivers\aksusb.inf
```

In this example, `c:\drivers` is a directory to which the driver files were copied.

3. After you finish modifying the Windows PE image, dismount the image. For example:

```
dism /unmount-wim /Mountdir:c:\winpe_x86\mount /commit
```

# Installing in an Online Windows PE Image

You can install an out-of-box driver in a running environment of Windows Preinstallation Environment (Windows PE) 3.0 by using the **Drvload** tool. **Drvload** accepts one or more driver (`.inf`) files as input. If the driver `.inf` file requires a reboot, Windows PE ignores the request. If the driver `.sys` file requires a reboot, the driver cannot be added by using the **Drvload** tool.

Online driver installation consumes scratch space (that is, Windows PE allocated writeable memory).

**To install the Sentinel HASP Run-time Environment drivers in an online Windows PE image:**

■ At a command prompt, enter the following command:

**`drvload.exe [inf_path]`**

where `[inf_path]` is the path to the device driver. You can specify multiple paths by separating each inf_path entry with a comma.

# Installing in Windows Embedded Standard 7 Using the Distribution Share

Image Configuration Editor (*ICE*) enables you to add out-of-box drivers to an answer file by using a distribution share. After you store your out-of-box drivers in the share, you can add them easily to your answer file.

You can copy drivers directly to the Out-of-Box Drivers folder in a distribution share without opening ICE. You can also use ICE to add, remove, or modify out-of-box drivers in a distribution share folder. After drivers are copied to the appropriate folder, they are available in the distribution share pane of ICE and can be added to an answer file.

Subfolders can be used to organize out-of-box drivers. When an Out-of-Box Drivers folder is added to an unattended installation answer file, all drivers in the folders and subfolders are also added.

**To install the Sentinel HASP Run-time Environment drivers in the distribution share:**

1. Open ICE.
2. Open a distribution share.
3. From the **Tools** menu, choose **Explore Distribution Share**.

   The Distribution Share window opens.
4. Copy the driver files to the Out-of-Box Drivers folder or move them to the folder by using a drag-and-drop operation.
5. Close the Distribution Share window.

The out-of-box driver files appear under the Out-of-Box Drivers node in the Distribution Share pane.

**To add the Sentinel HASP Run-time Environment drivers from the distribution share to an answer file by using the shortcut menu:**

1.  In the distribution share pane, navigate to the driver you want to add. Right-click the driver.
2.  From the menu, choose **Insert Driver Path to Pass 2 offlineServicing**

    OR

    From the menu, choose **Insert > Driver Path** and select the directory containing the drivers.

The drivers from the selected directory are added to the answer file.

**To add an out-of-box driver in the distribution share to an answer by dragging it to the answer file:**

1.  In ICE, choose the menu options **Tools > CreateMedia > Create IBW Image From Answer File**.
2.  Select the target directory where the image will be built.
3.  Using the IBW DVD, install the image by selecting the option **Deploy an Answer File or WIM** and then selecting the AutoUnattend.xml file created in the selected target directory.

**Chapter 4**

# Installing Sentinel HASP Run-time Environment for Mac

This chapter describes how to install the Sentinel HASP Run-time Environment on a machine with a Mac operating system, and explains how to modify the behavior of the daemons.

**In this chapter:**

■  Installing Sentinel HASP Run-time Environment on a Mac Machine

■  Installed Files

■  Modifying the Behavior of the Daemons

## Installing Sentinel HASP Run-time Environment on a Mac Machine

Follow the instructions below to install the Sentinel HASP Run-time Environment on a machine with a Mac operating system.

**To install the Sentinel HASP Run-time Environment:**

1.  Insert the Sentinel HASP Installation DVD into your machine.
2.  Open /MacOS/Redistribute, and double-click **HASP SRM RTE Installer.dmg**. The image is mounted.
3.  Double-click the **Sentinel HASP RTE Installer** disk image icon.

4. In the Sentinel HASP RTE Installer window, double-click **Sentinel HASP Run-time Environment Install**. The installer wizard is launched.

5. Follow the instructions of the installer wizard until the installation is complete.

## Installed Files

After you run the installation, the following files are located on your hard drive.

Verify that the following files are installed:

- /usr/libexec/aksusbd (support for HASP HL keys)
- /usr/libexec/hasplmd (HASP License Manager daemon)
- /Library/LaunchDaemons/com.aladdin.aksusbd.plist
- /Library/LaunchDaemons/com.aladdin.hasplmd.plist
- For Mac OS X 10.4.11 or 10.5.8: /Library/Receipts/HASP SRM RTE Installer.pkg. The file is created by Installer.app(default).

Following successful installation, the Sentinel HASP Run-time Environment is automatically launched. The first time that the Run-time Environment is launched, hasplmd creates configuration files in /private/etc/hasplm/.

## Modifying the Behavior of the Daemons

Behavior of the daemons can be modified by changing the switches used to start the daemons. Modification requires the following steps:

- Terminating the daemons
- Determining the switches to use
- Saving the modifications
- Restarting the daemons

**To terminate the daemons:**

1. Ensure that you have Administrator privileges.

2. Launch **/Applications/Utilities/Terminal**.

3. At the command prompt, enter the following commands:

```
sudo launchctl unload com.aladdin.hasplmd.plist
sudo launchctl unload com.aladdin.aksusbd.plist
```

(When prompted enter your Administrator password.)
The daemons stop running.

**To determine which switches to use:**

Use the table that follows to determine which command line switches to use to set the behavior of the **aksusbd** and **hasplmd** daemons.

| Daemon | Command | Description |
|---|---|---|
| Both | -f | Forces the daemon to work in the foreground. Required for `launchd` startup. |
| Both | -h, --help | Displays a list of available commands |
| Both | -l <level> | Specifies the level of log messages. The values are:<br>0 - Errors only<br>1 - Normal<br>2 - Verbose<br>3 - Ultra verbose |
| Both | v | Displays aksusbd and API versions<br>OR<br>Displays hasplmd version |
| aksusbd | -d <milliseconds> | Specifies the delay after connecting a HASP HL key, before it can be accessed the first time (range 0–2000) |
| aksusbd | -q <entries> | Specifies the length of the work queue (default 64) |
| aksusbd | -u <mask> | Specifies the permission bits for the special socket file. Default is 666 (access for all users) |
| aksusbd | -s <file> | Specifies the communication socket name |
| hasplmd | -s, -start | Starts the HASP License Manager daemon |
| hasplmd | -u <user> | Launches daemon with owner as user to enhance security |

**To save the selected switches:**

After determining which switches you want to employ, do the following to save the switches in the `.plist` files so that they will be used each time the daemons are launched when the system is restarted:

■ Either edit the relevant `.plist` files using a text editor or use the /Developer/Applications/Utilities/ Property List Editor (part of the Xcode Developer Tools) to do the following:

    a. Add the modifications for `aksusbd` to /Library/LaunchDaemons/com.aladdin.aksusbd.plist

    b. Add the modifications for `hasplmd` to /Library/LaunchDaemons/com.aladdin.hasplmd.plist

Ensure that the `-f` switch is included in both daemons.

**To restart the daemons:**

After saving the selected switches, do the following to restart the daemons:

1. Ensure that you have Administrator privileges.
2. Launch **/Applications/Utilities/Terminal**.
3. At the command prompt, enter the following commands

```
sudo launchctl load com.aladdin.aksusbd.plist
sudo launchctl load com.aladdin.hasplmd.plist
```

(Enter your Administrator password when prompted.)

The daemons are restarted.

**Note:**

The Run-time Environment daemons are launched automatically when the system is restarted.

**Chapter 5**

# Installing Sentinel HASP Run-time Environment for Linux

This chapter describes how to install Sentinel HASP Run-time Environment v.1.15 on a computer with a Linux operating system.

**In this chapter:**

- Installing Sentinel HASP Run-time Environment on a Linux Computer
- Installed Files
- Uninstalling Sentinel HASP Run-time Environment

# Installing Sentinel HASP Run-time Environment on a Linux Computer

Follow the instructions below to install Sentinel HASP Run-time Environment v.1.15 under the Linux operating system.

## Uninstall the Earlier Sentinel HASP Run-time Environment

An existing installation of the Run-time Environment cannot be upgraded.

Before installing the new Run-time Environment, enter the following command to uninstall the existing Run-time Environment (if present):

- For RedHat: `rpm -e aksusbd-redhat`
- For SuSE: `rpm -e aksusbd-suse`

If the existing Run-time Environment was installed using the Run-time Environment installation script (dinst), remove this installation by entering following command as **root** from within the script package: `./dunst`

## Install Sentinel HASP Run-time Environment

**To install the Sentinel HASP Run-time Environment using RPM or DEB:**

1. (For x64 distributions) Manually install the 32-bit libraries (x86 compatibility packages).
2. Disconnect your HASP HL key (if any) from the computer.
3. Open a terminal window and navigate to Linux/Redistribute/Runtime/ on the Sentinel HASP DVD.

4.   As root, enter the following command:
     ♦   For RedHat or SUSE:
         **`rpm -i aksusbd-1.15-1.i386.rpm`**
     ♦   For Ubuntu 32-bit Desktop:
         **`dpkg -i aksusbd_1.15-1_i386.deb`**
     ♦   For Ubuntu 64-bit Desktop:
         **`dpkg -i --force-architecture aksusbd_1.15-1_i386.deb`**

**Note:**

All installation/uninstallation commands must be executed with
**root** rights. In Ubuntu, prefix the commands with the **`sudo`**
command; in other distributions use the **`su`** utility to became root
in the terminal window.

The Sentinel HASP Run-time Environment is launched.

5.   (Optional) To support legacy HASP and Hardlock parallel keys,
     refer to the instructions in the file INSTALL inside the **aksparlnx**
     packages.

6.   Reattach the HASP HL key.

**Note:**

At this point, the firmware on the HL key may be automatically
upgraded. During the upgrade process, the key will blink
continuously. *Do not remove the key while it is blinking.* If you
remove the key too soon, the key may no longer be visible in
Admin Control Center. If the key is not visible, or if the upgrade
does not occur, see *Upgrading HASP HL Key Firmware* on page 45.

**To install the Sentinel HASP Run-time Environment from a script:**

(Use this procedure if the distribution does not support RPM or
DEB.)

1.   (For x64 distributions) Manually install the 32-bit libraries (x86
     compatibility packages).

2.   Disconnect your HASP HL key (if any) from the computer.

3.   Copy the package Linux/Redistribute/Runtime/aksusbd-1.15.1-i386.tar.gz from the
     Sentinel HASP DVD to a local directory.

4.   Open a terminal window in the local directory.

5.  Enter the following command to uncompress the package
    containing the Run-time Environment installer:

    `tar zxvf aksusbd-1.15.1-i386.tar.gz`

6.  Enter the following command to change to the directory
    containing the installer:

    `cd aksusbd-1.15.1-i386`

7.  As **root**, enter the command: `./dinst`

    The Sentinel HASP Run-time Environment is launched.

8.  (Optional) To support legacy HASP and Hardlock parallel keys,
    refer to the instructions in the file INSTALL inside the **aksparlnx**
    packages.

9.  Reattach the HASP HL key.

**Note:**

At this point, the firmware on the HL key may be automatically
upgraded. During the upgrade process, the key will blink
continuously. *Do not remove the key while it is blinking.* If you
remove the key too soon, the key may no longer be visible in
Admin Control Center. If the key is not visible, or if the upgrade
does not occur, see *Upgrading HASP HL Key Firmware* on page 45.

# Installed Files

After you run the installation, verify that the following files are
installed:

■   /usr/sbin/winehasp (access for HASP HL keys to Windows applications
    running in Wine)

■   /usr/sbin/aksusbd (support for HASP HL keys and low-level access to
    HASP License Manager daemon)

■   /etc/init.d/aksusbd (startup script for HASP License Manager daemon)

■   /usr/sbin/hasplmd (HASP License Manager daemon)

■   /etc/udev/rules.d/80-hasp.rules (rules for /udev)

Following successful installation, the Sentinel HASP Run-time
Environment is automatically launched. The first time that the
Run-time Environment starts and you submit configuration changes,
hasplmd creates a hasplm.ini configuration file in /etc/hasplm.
In addition, log files are created in /var/hasplm/.

# Uninstalling Sentinel HASP Run-time Environment

**To uninstall Sentinel HASP Run-time Environment v.1.15 when installed using RPM or DEB:**

- For RedHat or SUSE: As root, enter the command:

  **`rpm -e aksusbd`**

- For Ubuntu: Enter the command:

  **`sudo dpkg -r aksusbd`**

**To uninstall Sentinel HASP Run-time Environment when installed using "dinst":**

- As root, open a terminal window and enter the command:

  **`./dunst`**

# Upgrading HASP HL Key Firmware

The HASP HL Key Firmware has been modified to support future planned security enhancements in Sentinel HASP. Sentinel HASP automatically upgrades the Firmware on HASP HL keys from v.3.21 to the latest version (v.3.25). This occurs:

- when a HASP HL key with v.3.21 Firmware is present on a computer where the Run-time Environment is being updated to v.1.15.

- when a customer connects a HASP HL key with v.3.21 Firmware to a computer where the Run-time Environment v.1.15 has been previously installed.

(You can determine the Firmware version of your HL key by viewing the key on the HASP Keys page of the Admin Control Center.)

For HL keys with Firmware earlier than v.3.21, the upgrade does not occur automatically. Customers can upgrade the Firmware to v.3.25 by apply the Firmware Update V2C provided on the Sentinel HASP Installation DVD v.5.10.

During the Firmware upgrade, the relevant key will start to blink. Do not remove the key while it is blinking. If you remove the key too soon, the key may no longer be visible in Admin Control Center.

**Note:**

In the event the key is no longer visible using the Linux Run-time Environment, do the following on a Windows computer:

1. Install Sentinel HASP Run-time Environment from the Sentinel HASP v.5.10 DVD.

2. Insert the key.

3. Run the application `FirmwareUpdate.exe`, located on the DVD in \Windows\Installed\Redistribute\Firmware Update\.

   The HL key is upgraded to v.3.25 Firmware and will now be visible in the Linux Admin Control Center.

# Installing Sentinel HASP Run-time Environment Using an Installation Utility

Sentinel HASP Run-time Environment is required for your protected software to run at the end user's site. While the Run-time Environment is installed automatically when you install Sentinel HASP Vendor Suite, you must ensure that the Run-time Environment is installed at the end user's site where your protected software will be installed.

The following utilities are available for installing the Sentinel HASP Run-time Environment at the end user's site:

- A stand-alone GUI installer (`HASPUserSetup.exe`)
- A command line installer that you can integrate into your software installer (`haspdinst.exe`)

These utilities recognize the operating system in use and install the correct Run-time environment.

**Note:**

Administrator privileges are required to install the Sentinel HASP Run-time Environment.

**In this chapter:**

- HASPUserSetup.exe Utility
- haspdinst.exe Utility
- Multiple Installations on a Single End User's Computer

# HASPUserSetup.exe Utility

`HASPUserSetup.exe` is a GUI-based installation program to independently install the Sentinel HASP Run-time Environment. Following installation, the file is located in
…\Program Files\SafeNet\Sentinel HASP\\Redistribute\Runtime Environment\Setup

To launch the utility, double-click `HASPUserSetup.exe` and follow the wizard instructions.

# haspdinst.exe Utility

`haspdinst.exe` is a command-line utility that installs the Sentinel HASP Run-time Environment. Following installation, the file is located in …\Program Files\SafeNet\Sentinel HASP\Redistribute\Runtime Environment\cmd Install

### To install the Sentinel HASP Run-time Environment:

■ Type **haspdinst -i** in the command line. A message is displayed informing you that the Sentinel HASP Run-time Environment was successfully installed.

### To remove the Sentinel HASP Run-time Environment:

■ Type **haspdinst -r** in the command line. A message is displayed informing you that the Sentinel HASP Run-time Environment was successfully removed.

### To upgrade the Sentinel HASP Run-time Environment:

■ Type **haspdinst -i** in the command line. The `haspdinst.exe` utility automatically manages the upgrade process. A message is displayed informing you that the Sentinel HASP Run-time Environment was successfully installed.

### Additional Haspdinst Utility Commands

The following table lists additional commands that can be executed using the `haspdinst.exe` utility.

| Command | Description |
| --- | --- |
| -info | Displays the installation status |
| -h and -? | Displays a list of the available commands |
| -kp | Enables the installation program to 'kill' all processes accessing the Run-time Environment |
| -cm | Sets the installation program to only display critical messages (for example, instructions to reboot) |
| -fr | Sets the installation program to remove Sentinel HASP Run-time Environment by force, leaving the run-time in a non-functioning state |
| -fi | Sets the installation program to ignore other running Windows processes |
| -nomsg | Sets program to display no messages |

# Multiple Installations on a Single End User's Computer

The Sentinel HASP Run-time Environment installer utilities contain an automatic mechanism that prevents more than one instance of the Run-time Environment from being installed on a single computer, even if multiple protected applications are installed on the computer.

The Run-time Environment installer utilities employ a counter that keeps track of the number of protected applications installed on a given computer. For each installation after the first, the installer simply increments the counter instead of actually installing an additional copy of the Run-time Environment. Similarly, the counter is decremented each time the Run-time Environment is uninstalled. The Run-time Environment is not actually uninstalled until the number of uninstalls reaches the number of installs.

# Introducing Your Sentinel HASP Vendor Keys to the Sentinel HASP System

When you order Sentinel HASP protection keys from SafeNet, you are assigned a unique Batch Code. If you have ordered HASP HL keys, they will arrive together with your Sentinel HASP Vendor keys.

The Sentinel HASP Vendor keys contain your unique Vendor Code, vendor-specific APIs, and the vendor library, which are required when using Sentinel HASP to protect and license software. For more information about Batch Codes, see the description of personalized Vendor and Batch Codes in the *Sentinel HASP Software Protection and Licensing Guide*.

Before you begin to use Sentinel HASP Vendor Suite, you must introduce your Sentinel HASP Vendor keys to the system to ensure that your applications are protected and licensed with the unique codes that have been assigned to you.

Introducing your Sentinel HASP Vendor keys has three functions:

- Associating the Sentinel HASP Vendor Suite applications with your confidential codes
- Generating language-specific API libraries and objects
- Ensuring that you have the most up-to-date vendor library (for HASP SL protection)

**To introduce your Sentinel HASP Vendor keys:**

1. Connect your Sentinel HASP Master key to your computer.
2. Run the MasterHASP Wizard (Start > Programs > SafeNet > Sentinel HASP > Tools > MasterWizard). The MasterHASP Wizard launches, detects, and lists all new Sentinel HASP Vendor keys (Master key and Developer key).

   **Note:**
   If you open either Sentinel HASP Envelope or Sentinel HASP ToolBox, and the application detects a new Sentinel HASP Vendor key, the MasterHASP Wizard will launch automatically.

3. Enter a name for the file in which the Vendor Code information will be saved. It is recommended that you store all the Vendor Codes in the VendorCodes folder.

   On most Windows installations, the directory is located in:

   …\Documents and Settings\[*logged_in_user_name*]\My Documents\ Aladdin\Sentinel HASP [*version*]\API\Runtime\VendorCodes

   By default, the Sentinel HASP Vendor Suite applications search this directory for the Vendor Code.

4. In the Specify API Settings window of the wizard, select the libraries for which you want to generate APIs. If you want to merge APIs of multiple Batch Codes into a single library, click **Advanced**. You can merge up to four APIs to a single library. When you merge APIs, individual libraries are generated in addition to the merged ones.

   The generated APIs are located in the following directories, as appropriate:

   …\Documents and Settings\[*logged_in_user_name*]\My Documents\ Aladdin\Sentinel HASP [*version*]\API\Runtime\C

   …\Documents and Settings\[*logged_in_user_name*]\My Documents\ Aladdin\Sentinel HASP [*version*]\API\Runtime\COM

   …\Documents and Settings\[*logged_in_user_name*]\My Documents\ Aladdin\Sentinel HASP [*version*]\API\Runtime\DotNet

   …\Documents and Settings\[*logged_in_user_name*]\My Documents\ Aladdin\Sentinel HASP [*version*]\API\Runtime\Java

   …\Documents and Settings\[*logged_in_user_name*]\My Documents\ Aladdin\Sentinel HASP [*version*]\API\Runtime\Delphi

5. When prompted, update the vendor library. This library is required for HASP SL protection, including creating trialware.

## Vendor-specific File Naming Conventions

The format of a Batch Code file name is `[Batch Code].hvc`. For example, if your Batch Code is **W3FLY**, the file name will be `W3FLY.hvc`. (The Batch Code is a representation of your confidential Vendor Code.) Your Sentinel HASP Vendor keys and all your HASP HL keys are labeled with your Batch Code.

By default, Sentinel HASP Vendor Suite applications search the `VendorCodes` folder for your Vendor Code/Batch Code information.

The format of API library names (for Windows) is `hasp_windows_[language]_[vendorcode].[library extension]`. For example, `hasp_windows_demo.lib` is a C-language API library associated with a demo key.

**Sentinel** HASP®

# Part 2  Installing Sentinel HASP Business Studio Server

**Part 2 contains:**

- **Chapter 8: Installing Sentinel HASP Business Studio Server Using the Installation Wizard**

    Defines the installation prerequisites for the Sentinel HASP Business Studio Server and explains how to perform a basic installation and configuration process.

- **Chapter 9: Network Configuration Options**

    Describes advanced network options, including how to install the Sentinel HASP Business Studio Server components on separate servers and to create a network environment that incorporates redundancy.

- **Chapter 10: Sentinel HASP Business Studio Server Frequently Asked Questions**

    Discusses the solutions to some of the frequently asked questions relating to the installation of the Sentinel HASP Business Studio Server in a network environment.

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# Chapter 8

# Installing Sentinel HASP Business Studio Server Using the Installation Wizard

Sentinel HASP provides an easy-to-follow wizard to guide you through the process of installing the Sentinel HASP Business Studio Server.

As part of the full installation process, the Sentinel HASP Business Studio Server Installation Wizard also installs Microsoft SQL 2005 Server Express. If you have an existing MS SQL database server, you can choose to use that for Business Studio Server.

This chapter lists the prerequisites that are required for installation and provides additional information to that provided in the Installation wizard.

**In this chapter:**

- Prerequisites
- Launching the Sentinel HASP Business Studio Server Installation Wizard
- Configuring the Font for Scheduled Reports
- Accessing Sentinel HASP Vendor Suite

# Prerequisites

MS SQL server must be installed in order to install the Sentinel HASP Business Studio Server. You have the option of having SQL Server automatically installed as part of the Business Studio Server installation, or of using an existing MS SQL server.

If you choose to have MS SQL server installed as part of the Business Studio Server installation, the following prerequisites must be available before you begin installation.

### Hardware

- At least 800 MB free disk space
- At least 1 GB RAM
- At least 1 GHz Pentium 4-compatible processor

### Software

- (32- and 64-bit) Windows 2003 Server, Windows XP, Windows Vista, Windows 2008, Windows 7

If you are using an existing database server to install the Sentinel HASP Business Studio Server, the following must be installed:

- Microsoft .NET Framework v.2.0 50727
- Microsoft Windows Installer v. 3.1
- One of the following:
    - ♦ Microsoft SQL Server 2005
    - ♦ Microsoft SQL Server 2005 Express edition (must be enabled for remote connections)
    - ♦ Microsoft SQL Enterprise 2008 x32/x64

### Access Rights

If you are using an existing server to install the Sentinel HASP Business Studio Server, you must have full Administrator privileges for your server.

# Launching the Sentinel HASP Business Studio Server Installation Wizard

The Sentinel HASP Business Studio Server Installation Wizard is launched from the Sentinel HASP DVD. The Installation wizard enables you to create a default installation with basic configuration.

### SQL Database

If you already have a Microsoft SQL database, you can use it with the Business Studio Server. For installation instructions, see step 11 of *Multi-server Installation Procedure* on page 66.

### Installation on Separate Servers

You can choose to install the Management component and the Activation component of the Sentinel HASP Business Studio server on separate servers. This option enables you to:

- Locate Sentinel HASP Business Studio data related to creating Products, managing orders, and so on, on a server that is protected behind a firewall that prevents access from outside your organization

- Locate functionality related to end users' activating software licenses on a separate server that is between the organization's primary firewall and a less secure firewall through which your end users can access the activation server

For additional information, see *Installing Business Studio Server Components on Separate Servers* on page 64.

### User Names and Passwords

- If you elect to use an existing SQL Server, you must know the machine name of the server. You must also have an existing user name and password that enables full Administrator privileges on the database.

- If you elect to have SQL Server installed automatically as part of the Business Studio Server installation, the following default user name and password are provided:
  - ♦ User Name: **sa**
  - ♦ Password: **BusStudio2.10**

**To run the Sentinel HASP Business Studio Server Installation Wizard:**

1. Insert the Sentinel HASP Installation DVD into your machine. The Sentinel HASP Setup Wizard automatically launches.

2. Click **Start the Sentinel HASP Setup**. The Sentinel HASP Installation Wizard welcome window is displayed.

3. Click **Next**.

4. Read the information displayed in each window, select your preferred options, and continue to follow the instructions in the wizard.

   If you are installing the Business Studio Server with an existing database, refer to step 12 of *Multi-server Installation Procedure* on page 67 for additional information.

5. Click **Finish** to exit this installation.

---

**WARNING!**

If you need to re-install the Sentinel HASP Business Studio Server, you must first uninstall the existing Business Studio Server. Uninstallation does not delete the existing database.

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# Configuring the Font for Scheduled Reports

The Sentinel HASP Reports facility is used to generate and view reports directly in Sentinel HASP Business Studio, or to schedule and distribute reports to a list of recipients. (For more information, see the description of the Reports facility in the *Sentinel HASP Software Protections and Licensing Guide*.)

The font used for viewing reports within Sentinel HASP Business Studio can be configured from the System Settings dialog box in the Business Studio.

For generating scheduled reports, the font used by default is
**DejaVuSans**. If you want to use a different TrueType font for this
purpose, you can specify the TTF font file to use in a configuration file
on the computer where Sentinel HASP Business Studio Server is
installed.

**Note:**

To generate scheduled reports in a non-Latin font (such as Japanese or
Chinese), you must specify a TrueType font that contains the
appropriate Japanese or Chinese characters.

**To configure the font used in scheduled reports:**

1. On the computer where Sentinel HASP Business Studio Server is
   installed, navigate to the directory:

   ...\Program Files\SafeNet\Sentinel HASP Server\Servers\Sentinel HASP Server\

   (When installing Business Studio Server components on separate
   computers, configure the font on the computer where you installed
   the Management component.)
2. Open the file **hasp_svr.cfg** in NotePad or any other text editor.
3. Add or modify the following line in the file:

   REPORT_FONT=[fontName]

   where [fontName] is the name of a TrueType font. For example:

   REPORT_FONT=ariel.TTF
4. Save and close the file.
5. Stop and restart the **Sentinel HASP Business Studio Server** service.

# Accessing Sentinel HASP Vendor Suite

After you have completed installing the Sentinel HASP Business Studio Server, you will want to access the applications. The default user name and password are **HASP**.

**Note:**
It is highly recommended that you change the default password as soon as possible. (The default user name is hard-coded into the database and cannot be changed or deleted.) You make these changes in Sentinel HASP Business Studio. For more information, see the *Sentinel HASP Software Protection and Licensing Guide*.

# Network Configuration Options

The Sentinel HASP Business Studio Server can be installed on a single machine, or you can install the Business Studio Server Management components on a separate machine from that on which the Activation components are installed.

Each server listens on a TCP port for incoming requests. The requests are encrypted using the built-in SSL feature. Each server then communicates with the Sentinel HASP database (a single database for the entire system) to process the requests.

This chapter describes the considerations and procedures for installing the components of the Business Studio Server on separate servers. It also describes how to install in a local or wide network environment, creating a redundant system. It is not necessary to create redundancy in the system, however it is recommended.

**WARNING!**

Remember to frequently back up your Sentinel HASP database to protect your data.

**In this chapter:**

- Installing Business Studio Server Components on Separate Servers
- Multi-server Installation Prerequisites
- Installing Business Studio Server in a Network Environment with Redundancy
- Understanding Redundant Networks
- Minimum Network Installation Requirements When Using Redundancy
- Network Environment Installation

# Installing Business Studio Server Components on Separate Servers

You can choose to install the Management component and the Activation component of the Sentinel HASP Business Studio Server on separate server machines.

Installing the Sentinel HASP Business Studio Server on more than one machine enables you to ensure that the confidential data relating to Features, Products, orders, customers, and other related information, is safely installed to prevent access from outside your organization. You can set firewall rules that enable your customers to access the Product Activation server, and prevent them accessing the Management server, as depicted in the following illustration.
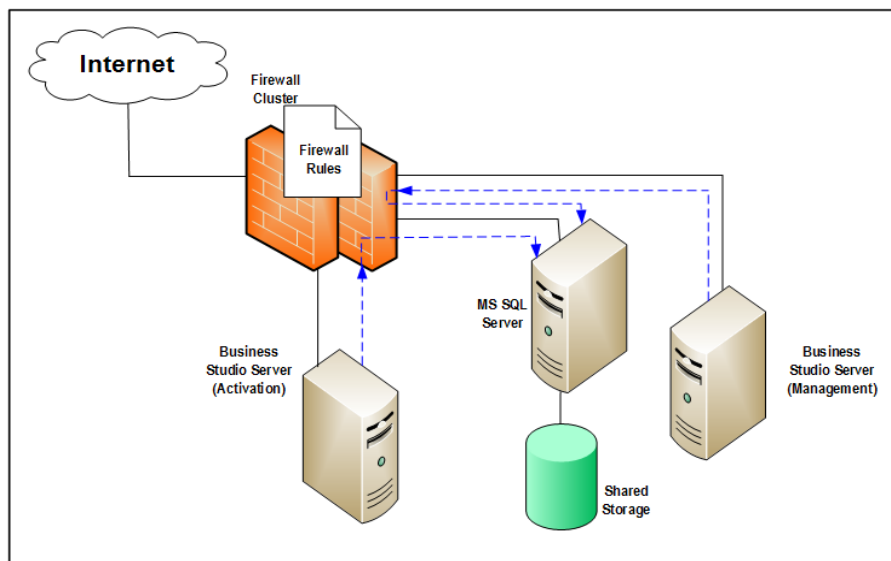
Setting firewall rules gives you control over access to the Business Studio Server. You must specify that:

■ External access (outside of your organization) is available to the Activation component of the Business Studio Server.

■ Internal organizational access only is available to the Management component of the Business Studio Server.

■ Each server that hosts the Activation component or the Management component of the Business Studio Server has access to the SQL server and Sentinel HASP database.

## Multi-server Installation Prerequisites

In order to install the Sentinel HASP Business Studio Server on more than one machine, the following prerequisites are required:

■ Microsoft SQL Server must be installed, either together with the Management or Activation Server, or on a separate third machine:

♦ When installing SQL Server on a third machine, it must be installed before installing the Management and Activation Servers.

♦ When installing SQL Server on the Management or Activation Server, during the Business Studio Server installation, the installer will detect whether there is an existing instance of an SQL server on the machine. MS SQL 2005 Express can be automatically installed as part of the Business Studio Server installation.

■ A separate Sentinel HASP Master key must be connected to each server machine. The Master key that contains your Sentinel HASP licenses must be attached to the machine on which the Activation server component is installed. If you have more than one Activation server in the network, each one must have a duplicate Master key that contains your Sentinel HASP licenses.

# Multi-server Installation Procedure

When installing Business Studio Server on multiple servers, use the procedure below to install each component on the relevant server.

**To install Business Studio Server components on separate machines:**

1. Before you start the installation, ensure that you have backed up any existing Sentinel HASP database and saved it with a different name so that it cannot be inadvertently overwritten.

2. Insert the Sentinel HASP Installation DVD into your machine. The Sentinel HASP Setup Wizard launches automatically.

3. Click **Start the Sentinel HASP Setup**. The Sentinel HASP Installation Wizard welcome window is displayed.

4. Click **Next**. The License Agreement window is displayed. You must accept the displayed license agreement in order to proceed.

5. Click **Next.** The Installation Mode window is displayed. Ensure that the **Sentinel HASP Business Studio Server** check box is selected.

6. Click **Next**. The SQL Server Installation window is displayed. Choose either the **Install SQL 2005 Express on this computer** or the **Use an existing SQL Server installation** option, as appropriate.

7. Click **Next**. The Select Installation Type window is displayed. If the installer detects an existing server, these buttons are disabled.

8. Select **Custom** and click **Next**. The Select Components window is displayed.

9. Expand the **Server** icon and select either **Activation** or **Management**, depending on which component you wish to install on this server.

10. Click **Next**. To prevent the component that you do not wish to install at this time from being installed, expand its icon and select **Entire Feature will be unavailable**.

11. If the SQL Server Connection window is displayed:

    a. In the **SQL Server Name** field, type the SQL server name. Alternatively, use the browse button to search for the machine on which the SQL server instance is installed. If you use this second method, select the machine name and instance from the drop-down list in the displayed dialog box. The information is displayed as [MACHINE NAME]\[INSTANCE], for example [MACHINE NAME]\HASPSRMDATABASE.

b. In the **SQL Authentication** area, specify an SQL user name and password for the database. The user must be an existing user with full administrator privileges.

If you previously used the Sentinel HASP user name and password, you do not need to change the default values.

12. Click **Next**. The Installation Configuration window is displayed. Select your preferred database creation option, then specify a name for the database in the **Database Name** field.

**Note:**
- Ensure that the database is not being accessed by users when you perform any of the following actions. (Users must not be logged into Sentinel HASP Business Studio, must not be activating software, performing database maintenance, or performing any other Sentinel HASP functions.)
- If you are upgrading an existing Sentinel HASP database to a newer Sentinel HASP database, remember to back up the existing database before performing the upgrade.

The following options are available:

♦ **Create a new database:** When you select the new database option, the database itself is created and populated with predefined Sentinel HASP data.

You must have SQL sysadmin or dbcreator privileges for this option.

♦ **Use a clean existing database**: If your sysadmin or dbcreator has provided you with a database that has not been populated with data, you can choose to use it for Sentinel HASP data.

Your sysadmin or dbcreator must give you at least db_owner privileges for this option.

♦ **Upgrade an existing Sentinel HASP database to Sentinel HASP v.5.10**: If you created a Business Studio Server database with v.4.0 or earlier of Sentinel HASP, you can upgrade it to the current version and continue to use its data.

You must have at least db_owner privileges for the database.

♦ **Use an existing Sentinel HASP [5.10] database**: If your database uses the same Business Studio Server version as would be installed using the Installation wizard, the Business Studio Server is able to connect to your existing database. You are required to provide the SQL server name and relevant SQL authentication details.

You must have db_owner privileges for the database.

### WARNING!

If you install a database using the same name as an existing database, all data will be overwritten. To retain the data in an existing database, back it up before overwriting and save it with a different name.

13. Click **Next**. The Port Definitions window is displayed. Select new server and child port values, if required. Do not change the default values unless the ports are already in use.

14. Click **Next**. The Password Configuration window is displayed. Specify a password for the Sentinel HASP Super Administrator.

    The Super Administrator holds the same privileges as an Administrator and can perform any of the Sentinel HASP functions. Unlike an Administrator, the Super Administrator cannot be obsoleted or changed.

15. Click **Next**. Review the Installation Settings Summary.

16. Click **Back** to return to the installation screens to make changes, or click **Next** to begin the installation.

### Note:

■ Repeat step 1 through step 15 to install the other Business Studio Server component (Management or Activation).

■ If it is necessary to change the font used to generate scheduled reports, see *Configuring the Font for Scheduled Reports* on page 60.

# Installing Business Studio Server in a Network Environment with Redundancy

This section describes the procedure for installing the Business Studio Server in a network environment, including redundancy to enable the server(s) to remain online in the event that a machine becomes unavailable. It is recommended that, as a minimum, you provide redundancy for the Activation server to ensure uninterrupted availability for end users activating their software.

## Understanding Redundant Networks

Redundancy eliminates a single point of failure in a network. The following graphic illustrates a simple redundancy setup installation for the Business Studio Server when both Management and Activation components are installed on the same machine.
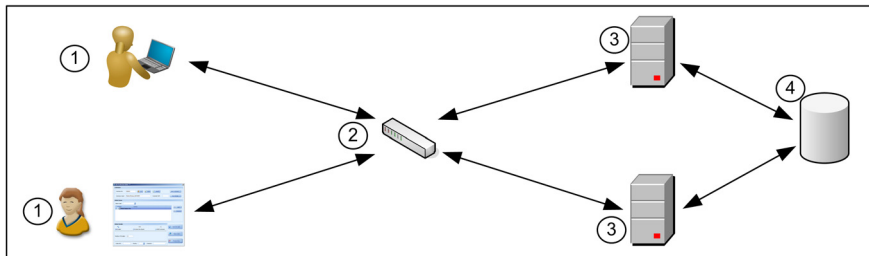


1.  When two or more server machines are utilized (item 3) in order to provide redundancy, each machine runs an identical instance of Business Studio Server, and each server machine accesses the same database (item 4). Each machine has its own IP address.

    **Note:**
    If you choose to install the Management server and the Activation server components on separate server machines, and you want to create a fully redundant system, identical instances of each server component must be installed on additional separate server machines.

2. A load balancer (item 2) is installed between the servers and the Sentinel HASP Vendor Suite applications and end-user applications. The load balancer is configured with the IP address of the actual servers. The load balancer has an additional—virtual—IP address, which is exposed to the network users. A DNS entry must point to the virtual IP address for the load balancer.

3. When Sentinel HASP Vendor Suite applications or end-user applications need to access the Business Studio Server, they send a request to the DNS name. The load balancer directs the requests to the appropriate Business Studio Server and channels the responses back to the user.

**Note:**
It is highly recommended that a DNS name is always used. This ensures that, in the event a server IP address changes, your software will still be able to access Business Studio Server, without the need to redistribute updates to your software.

## Minimum Network Installation Requirements When Using Redundancy

In addition to the prerequisites listed in the previous chapter, the following components and information are required in order to install the Sentinel HASP Business Studio Server in a network environment that includes redundancy:

■ Two or more servers to run Business Studio Server components

■ Sentinel HASP Master keys for each Batch Code for every server

**Note:**
Ensure that you have a Sentinel HASP Master key with your Sentinel HASP licenses for each Activation component server in the network.

■ Network load balancer with TCP functionality. It is recommended that you install load balancers in a cluster configuration.

- Firewall with at least 3 IP subnets. The subnets are required for:
  - ♦ the Internet
  - ♦ the SQL database
  - ♦ the load balancers

  It is recommended that you install the firewall in a cluster configuration.
- MS SQL cluster. Only a single database is required. If you have an existing SQL server, that database can be used. The sysadmin (sa) account of the existing database is required.
- IP addresses for use as the virtual IP address on the load balancer
- Static/NAT IP addresses of each of the servers

# Network Environment Installation

This section discusses the procedure for installing the Sentinel HASP Business Studio Server on multiple machines in a network.

The following diagram illustrates a network topology consisting of separate servers for the Business Studio Server Activation and Management components, and redundancy.
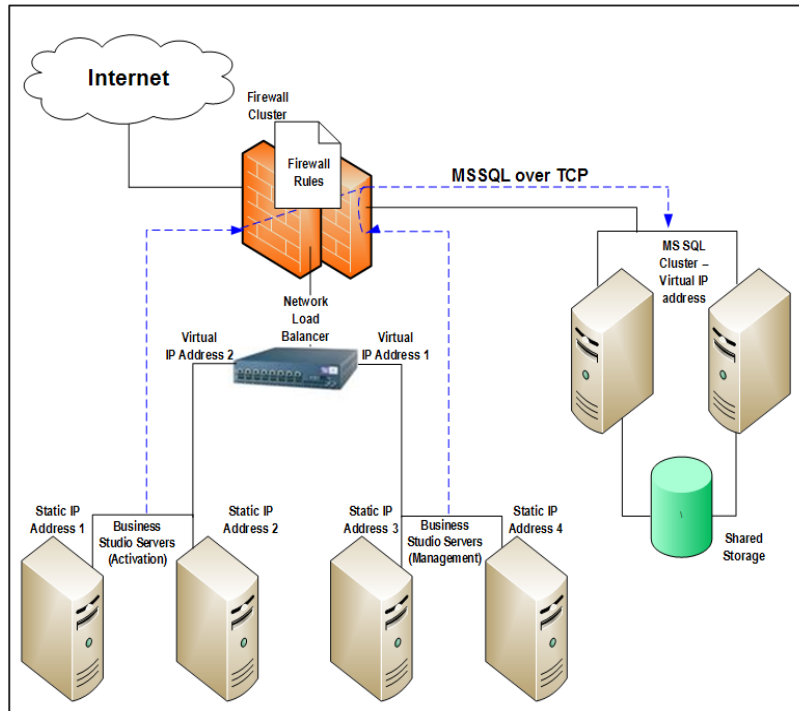
Server security is provided by setting firewall rules that control who can access the various servers on which Sentinel HASP is installed. In order to provide security in the illustrated scenario, you must specify that:

1. Only internal organizational users can access Virtual IP address 1, which provides access to the Management component of the Business Studio Server.

2. External users (outside of your organization) can only access Virtual IP address 2. Through this address, an end user can only access the Activation component of the Business Studio Server.

3. Both the Activation component and the Management component of the Business Studio Server can access the SQL server and Sentinel HASP database.

**To install the Business Studio Server in a network environment:**

1. Create an SQL database with a user name and password. The user must have SQL sysadmin or dbcreator privileges for this database.

   **Note:**
   The SQL database can be automatically created the first time that you install the Sentinel HASP Business Studio Server using the installation wizard. For more information, see the procedure for installing the Business Studio Server on separate machines .

2. On each of the server machines, run the Business Studio Server part of the Sentinel HASP installation, as follows:

   a. Insert the Sentinel HASP Installation DVD into your machine. The Sentinel HASP Setup Wizard launches automatically.

   b. Click **Start the Sentinel HASP Setup**. The Sentinel HASP Installation Wizard welcome window is displayed.

   c. Click **Next**. The License Agreement window is displayed. You must accept the displayed license agreement in order to proceed.

   d. Click **Next.** The Installation Mode window is displayed. Ensure that the **Sentinel HASP Business Studio Server** check box is selected.

   e. Click **Next**. The SQL Server Installation window is displayed. Select the **Use an existing SQL Server installation** option.

f.  Click **Next**. The Select Installation Type window is displayed.

g.  Select **Custom** and click **Next**. The Select Components window is displayed.

h.  Expand the **Server** icon and select either **Activation** or **Management**, depending on which component you wish to install on this server.

   To prevent the component that you do not wish to install at this time from being installed, expand its icon and select **Entire Feature will be unavailable.**

i.  Click **Next**. The SQL Server Connection window is displayed.

   In the SQL Server Connection window:

   ♦  Type the name of the SQL server on which you installed the SQL database in step 1 in the **SQL Server Name** field, or use the browse button to navigate to the required server name.

   ♦  Type the administrator user name and password for the SQL database that you created in step 1 in the **SQL User Name** and **SQL Password** fields.

j.  Click **Next**. The Installation Configuration window is displayed.

   In the Installation Configuration window:

   ♦  Select **Use a clean existing database**.

   ♦  Type the name of the database that you created in step 1.

   ♦  Click **Next**.

3.  Run the Business Studio Server installation on each of the other server machines in the network. Select the Activation server or Management server component as required, and otherwise use the same parameters as you specified for the first server installation.

   **Note:**
   If it is necessary to change the font used to generate scheduled reports, see *Configuring the Font for Scheduled Reports* on page 60.

4.  Configure the load balancer to balance SSL (TCP 443) traffic between the servers, and define a DNS entry for the virtual IP address.

5.  Open the ServiceData table inside the database (using an SQL utility). The table displays eight records.

6. Change the IP address/DNS name/URL in lines 1 through 8 to the virtual IP addresses of the load balancer, as follows:

   ■ The ServiceName **HASPClient** must be given the virtual IP address in the load balancer that relates to the Activation server.

   ■ All other ServiceNames must be given the virtual IP address in the load balancer that relate to the Management server.

7. Save your changes and close the ServiceData table.

8. Using a PC on the Internet, test that the installation is correct using one of the following methods:

   a. In your browser, enter the following URL:
      https://<SERVER>:<PORT>/HASPLogin?test.

      The test will return a **Database connection: PASSED** message.

   b. Launch Sentinel HASP Business Studio and attempt to log in. The default login user name and password is **HASP**.

**Note:**

To ensure your data is secure, change the default password as soon as possible.

**Chapter 10**

# Sentinel HASP Business Studio Server Frequently Asked Questions

This chapter reviews and answers some of the frequently asked questions relating to the installation of the Sentinel HASP Business Studio Server in a network environment.

### Can I use a non-system administrator (sa) account?

Yes, you can.

1.  Open the Microsoft SQL Server Management utility and create a new login. Ensure that:
    ♦  The login uses SQL server authentication
    ♦  The defined database is the Sentinel HASP database (by default, SRMServer)
    ♦  User mapping maps the login to the Sentinel HASP database, enabling all roles except `db_denydatawriter` and `db_denydatareader`
2.  Edit all the CFG files and change the `CONNECT_STRING` parameters as follows:
    ♦  Change `uid` to the login name that you defined
    ♦  Change `pwd` to the password that you defined
    Note that this string is displayed many times in the configuration files and must be changed in every instance.
3.  Restart the server.
4.  Check the connection by entering the following URL in your browser:
    https://<SERVER>:<PORT>/HASPLogin?test.
    The test will return a **Database connection: PASSED** message.

**How do I create a fault-tolerant Business Studio Server system?**

Build redundancy into your system to eliminate single-point failure. For more information about providing redundancy, see *Understanding Redundant Networks* on page 69.

**How can I best secure my Business Studio Server system?**

- Implement the standard IT information security protocols that are applicable to your organization.
- Ensure that only the TCP port number, as defined in `hasp_svr.cfg` `CLIENT_PORT`, is accessible from the Internet.
- Ensure that only Sentinel HASP Business Studio can access the SQL database.
- Change the default `HASP` password. For information about how to change passwords, see the Sentinel HASP Business Studio Help documentation.
- Ensure that personnel in your organization are designated appropriate roles in Business Studio, and that their accounts are inaccessible when they are no longer part of the organization. For more information about assigning roles, see the Sentinel HASP Business Studio Help documentation.

# Part 3    Appendixes

**Part 3 contains:**

■  Appendix A: Installing Language Packs

Describes how to download and install Sentinel HASP  language packs for languages other than English.

■  Appendix B: Uninstalling Sentinel HASP
Describes how to completely uninstall Sentinel HASP and the Sentinel HASP database.

# Installing Language Packs

You can use the Sentinel HASP Vendor Suite and utilities in languages other than English. You download the required language from the SafeNet Web site and install it on your system. Each user in your organization can download and use their preferred language.

**To download and install a language other than English:**

1. Go to http://www3.safenet-inc.com/lang and download the required language pack ZIP file.
2. Extract the files from the ZIP.
3. Follow the instructions in the Readme file to install the language pack.

**Notes:**

- Repeat the installation procedure to install additional languages.
- Use the Add/Remove Programs functionality to remove a language pack from the system.
- You can change the language settings for your Sentinel HASP applications by going to **Start > Program Files > SafeNet > Sentinel HASP > LanguageSelection**.
- A **Switch to English** button is provided in the wizard that you can use to change the language of the wizard's user interface to English.
- The display language for the Admin Control Center is independent of the language for the Vendor Suite. Separate language packs for the Admin Control Center can be downloaded and installed directly from Admin Control Center. For additional information, see the description of the Admin Control Center in the *Sentinel HASP Software Protection and Licensing Guide*.

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3. From the **Add or Remove Programs** window, remove Microsoft SQL Server 2005. A wizard similar to the following is launched:
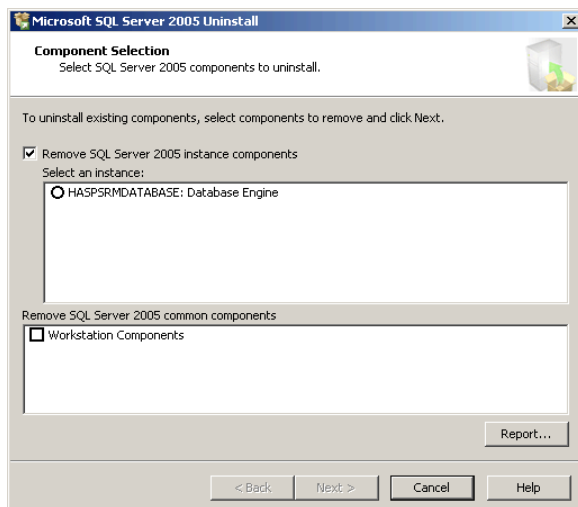


4. In the **Select an instance** box, select **HASPRMDATABASE: Database Engine**.
5. Click **Next**. Continue accepting defaults through completion of the wizard. The Sentinel HASP database is removed.
6. Remove the files:
   ♦ **SRMServer.mdf**
   ♦ **SRMServer_log.LDF**

   These files are located in the directory:

   C:\Program Files\Microsoft SQL Server\MSSQL.1\MSSQL\Data
   or
   C:\Program Files\Microsoft SQL Server\MSSQL.2\MSSQL\Data

7. Remove any of the following directories (and their content) that are present on your computer:
   ♦ c:\program files\SafeNet\Sentinel HASP\
   ♦ c:\program files\SafeNet\Sentinel HASP Server\
   ♦ c:\program files\Aladdin\HASP SRM\
   ♦ c:\program files\Aladdin\HASP SRM Server\

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