

Sentinel CLOUD SERVICES™

Cloud Run-time .NET Reference ReadMe



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.NET Reference Application

Introduction

The Sentinel® Cloud Run-time .NET Reference Application demonstrates the usage of Cloud Run-time APIs. It is useful for application developers who need to implement the Cloud Run-time API calls into their .NET application source code.

The .NET Reference Application covers the following stages of licensing:

Licensing	Usage
License Availability	Checks if a license can be granted to user or not.
Requesting a License	Authorizes a user by requesting a license from the Cloud Connect.
Releasing a License	Releases the license acquired by the user.

 For details about the Cloud Run-time APIs, refer to [Sentinel Cloud Run-time Guide](#).

Location of .NET Reference Application

The Reference Application is available after you install Sentinel Cloud Services .NET SDK. It is present in the installation directory at the path: `<InstallDir>\Samples\Dot NET SDK`.

Here, `<Install-Dir>` refers to the installation directory of Sentinel Cloud Services, which is `C:\Program Files\SafeNet Sentinel\Sentinel Cloud Services\`, by default.



For information about .NET SDK installation, refer to *Sentinel Cloud Services Installation Guide*.

Software Requirements

The following table lists the software requirements for configuring and using the .NET Reference Application.

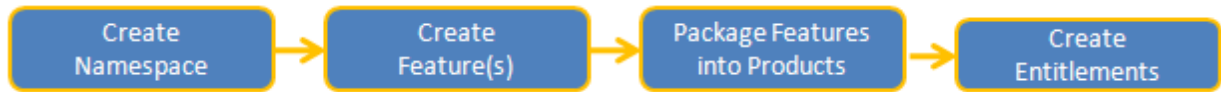
Software	Tested Versions
Windows Operating Systems	Windows Server 2008
Microsoft .NET Framework	2.0, 3.5
Microsoft Visual Studio	2005
Web Server	IIS 7.0
Web Browser (Recommended)	Internet Explorer 7



The .NET Application can be run with other software versions as well, however, only the tested versions are listed above.

Before You Use the .NET Reference Application...

Before you use the .NET Reference Application, entitlements must have been created in the Sentinel EMS. The typical workflow of creating an entitlement is depicted below. For exact steps, refer to the *Sentinel Cloud EMS User's Guide*:



- An entitlement can be for either cloud or on-premise.
- The “License availability” and “Request a License” features of the .NET Reference Application must use the entitlement information created in EMS.
- While the entitlements generated can be used right away by users, data aggregation begins only after an hour of the deployment. Beyond this, data aggregation will take place according to the frequency defined in EMS.

Building the .NET Reference Application

1. Navigate to the folder where the [.NET Reference Application is installed](#).

The default path is: *C:\Program Files\Safenet Sentinel\Sentinel Cloud Services\Samples\Dot NET SDK*.

2. Copy all the files from the installation folder to a folder on your machine, say **\DevCode\Sentinel Cloud Samples**.

Example – Copy from: *\Samples\Dot NET SDK*

to: *\DevCode\Sentinel Cloud Samples*

3. Add references of the following library files, which are available at *C:\Program Files\Safenet Sentinel\Sentinel Cloud Services\RunTimes\Dot NET SDK\External Libraries*:

- BouncyCastle.Crypto.dll
- Common.Logging.dll
- log4net.dll
- Microsoft.Practices.EnterpriseLibrary.Caching.dll
- Microsoft.Practices.EnterpriseLibrary.Common.dll
- Microsoft.Practices.ObjectBuilder.dll
- Quartz.dll
- Quartz.xml

These files will be copied to: *\DevCode\Sentinel Cloud Samples\Bin*.

4. Add reference of the following DLL file, which is available at *C:\Program Files\Safenet Sentinel\Sentinel Cloud Services\RunTimes\Dot NET SDK\Library* :

- *SentinelCloudRuntime.dll*: For cloud applications

This file will be copied to: *\DevCode\Sentinel Cloud Samples\Bin*

5. For On-premise applications, copy *SentinelCloudRuntime_P.dll* (32- bit) or *SentinelCloudRuntime_P_x64.dll* (64- bit), at:
 - C:\WINDOWS\system32
 - A custom location and add the location in the **Path** environment variable.
6. Open Microsoft Visual Studio. Go to **File > Open WebSite** and open the sample. In our example, open *C:\DevCode\Sentinel Cloud Samples*.
7. Open the **Web.Config** file and copy its sections in your application configuration file.
8. For on-premise deployment, set the path of your application configuration file in the SFNT_SCR_CONFIG_FILEPATH environment variable.
9. Update the following elements in the configuration file:

DeploymentType

- This parameter specifies the deployment mode to be used for compiling the application. This value can be either **OnPremise** or **Cloud**.

- Example:

```
<add key="DeploymentType" value="Cloud" />
```

ClientAlias

- This was sent to you in a previous e-mail from SafeNet.
- This is usually the vendor name specified in the vendor registration request.
- Example:

```
<add key="ClientAlias" value="isv"/>
```

YPSAddress

- This was sent to you in a previous e-mail from SafeNet.
- This parameter is the address of the Sentinel Directory Services server.
- Example:

```
<add key="YPSAddress" value="https://yps-trial.sentinelcloud.com/YPSTServer" />
```

SecretKey

- This was sent to you in a previous e-mail from SafeNet.
- This is the secret key used for authenticating client requests.
- Example:

```
<add key="SecretKey" value="SecretKey" />
```

SecretKeyId

- This was sent to you in a previous e-mail from SafeNet.
- This is the ID of the secret key.
- Example:

```
<add key="SecretKeyId" value="SecretKeyId" />
```

VendorID

- This was sent to you in a previous e-mail from SafeNet.
- This parameter is the unique ID assigned to a vendor by SafeNet.
- Example:

```
<add key="VendorId" value="a8e06c3" />
```



If you are using proxy server, then you will need to configure the Cloud Run-time proxy settings as well. For details of proxy settings, please refer to the [Sentinel Cloud Run-time Guide](#).

10. In Visual Studio, set the start page to **getInfo.aspx**.
11. Build and start the Web site.

Accessing the .NET Reference Application

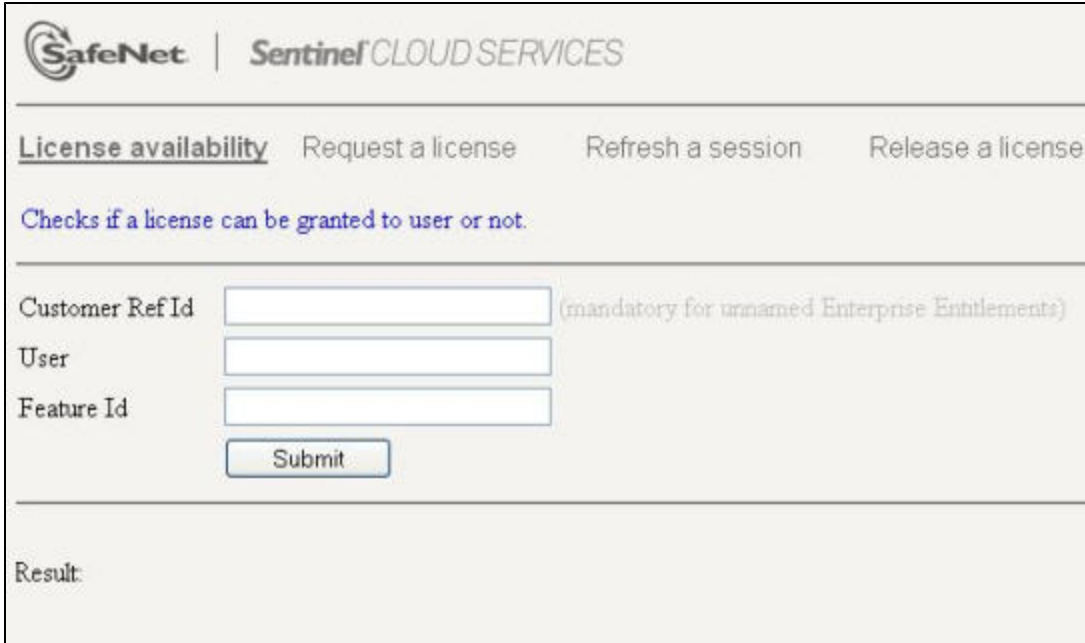
After building the .NET Reference Application, you can access it by using the following URL:

http://localhost:portnumber/Sentinel Cloud Samples/login.aspx.

In this URL:

- Localhost is the IP address of the host
- Port number is the port used by the application

.NET Reference Application User Interface



The screenshot shows the user interface for the .NET Reference Application. At the top, there is a header with the SafeNet logo and the text "Sentinel CLOUD SERVICES". Below the header, there are four links: "License availability", "Request a license", "Refresh a session", and "Release a license". Under "License availability", there is a sub-link: "Checks if a license can be granted to user or not.". Below this, there are three input fields: "Customer Ref Id" (with a note "(mandatory for unnamed Enterprise Entitlements)"), "User", and "Feature Id". A "Submit" button is located below the "Feature Id" field. At the bottom, there is a "Result:" label.

 We assume that the Sentinel EMS Web portal is already up and running.

The Cloud Run-time Reference Application can be hosted on the IIS server using the **Build > Publish Web site** option in Microsoft Visual studio.

Using the .NET Reference Application

Once entitlements are created into the system, a user can access the .NET Reference Application and see the usage of APIs.



An error will be thrown if any feature is not allowed. For a list of possible error codes, refer to the [Sentinel Cloud Run-time Guide](#).

Viewing Usage Related Information

Users can login into Sentinel EMS (Customer Login) using their entitlement IDs (received in the e-mail), and can view the following information:

- Usage details of an entitlement (available only if the entitlement has been aggregated by Data Engine).
- Billing detail
- License state of the features
- Concurrent sessions for features having concurrent license model
- Usage count of features having pre-paid license model

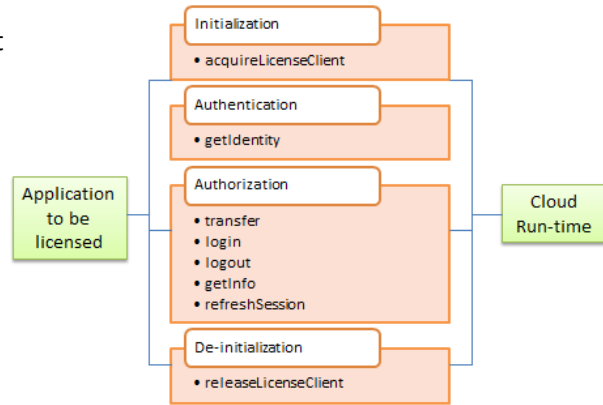


For more information, please refer to *Sentinel Cloud EMS User's Guide*.

Using the Sentinel Cloud Run-time .NET APIs

Sentinel Cloud Run-time provides a set of APIs that you can use to license your applications. For API details, refer to *Sentinel Cloud Run-time Guide*.

A brief description of the APIs is given below:



Licensing Function	API	Description
Initialization	acquireLicenseClient	Obtains an instance of the Cloud Run-time.
Authentic- ation	getIdentity	Authenticates a user by requesting authentication cookie, identity, and customer reference ID from Cloud Connect. Note: This API is applicable only for on-premise feature level licensing, implemented with authentication. To use this API, an authentication system should be integrated with Sentinel Cloud. Please contact SafeNet for integration-related details.
Authorization	transfer	Detaches licenses, returns licenses, and syncs usage with Cloud Connect. Note: This API is used only for on-premise licensing.
	login	Authorizes a user by requesting a license from the Cloud Connect.
	logout	Releases the license acquired by the user.
	getInfo	Retrieves information about entitlements and features for a given user.
	refreshSession	Refreshes a concurrent session. Note: This API is used only for cloud applications.
De-ini- tialization	releaseLicenseClient	Releases the instance of the Cloud Run-time.

To learn about using the Sentinel Cloud Run-time .NET APIs in your source code, refer to the files *login.aspx.cs*, *logout.aspx.cs* and *getInfo.aspx.cs*, available at: `\Samples\Dot NET SDK` .

File	Purpose	Returns
<i>login.aspx.cs</i>	Contains a sequence of APIs to implement the login API. This file is corresponding to the “request a license”	Successful execution of the login API returns a session handle, which is displayed on the Release

File	Purpose	Returns
	stage.	a License page. The inputs displayed on the screen are parameters of the login API.
<i>logout.aspx.cs</i>	Contains a sequence of APIs to implement the logout API. This file is corresponding to the "release a license" stage.	Session handle obtained in the above step should be used here to release license. The inputs displayed on the screen are parameters required by the logout API.
<i>getInfo.aspx.cs</i>	Contains a sequence of APIs to implement the getInfo API, which helps check the feature authorization. This file is corresponding to the "license availability" stage.	A list of entitlements is returned by getInfo. Search this list to check the feature availability, and set the value of "Result" based on the license status.
<i>refreshSession.aspx.cs</i>	Contains a sequence of APIs to implement the refreshSession API. This file is corresponding to the "refresh a session" stage.	Session handle to be refreshed. The session handle is same as the one returned by the login API.



"Exception" and "Error code" display any exception and error code, respectively, as returned by the Cloud Run-time APIs.

Obtaining 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/