

# Getting Started with SecureAssist Visual Studio

November 2015

SecureAssist is an IDE package that points out common security vulnerabilities in real time as you're coding. When you open a file, it quickly runs in the background and populates an Issue List with any problems. At any time, you can review the issues in the list and read guidance about why the code might be a problem. SecureAssist even shows you sample code for how to fix it yourself before the problem ever goes into the security review process.

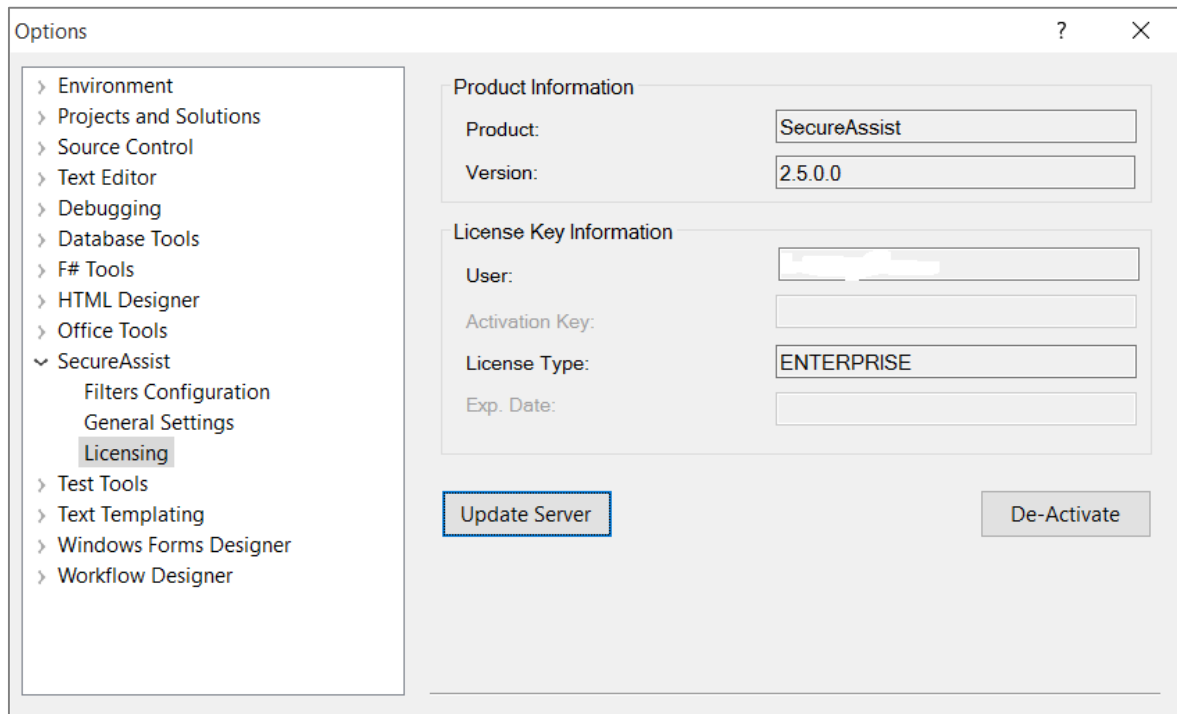
## Install

1. Close any running instances of Visual Studio.
2. Navigate to the Setup.exe installer (it will be in a .zip file that you downloaded or received) and double-click to run the setup wizard.
3. Select whether to install for current user or for all users of the machine (requires administrative rights), then click **Install**.
4. Accept the terms of the license, select the IDEs for which to install SecureAssist (in case of multiple VS IDEs installed), and click **Install**.

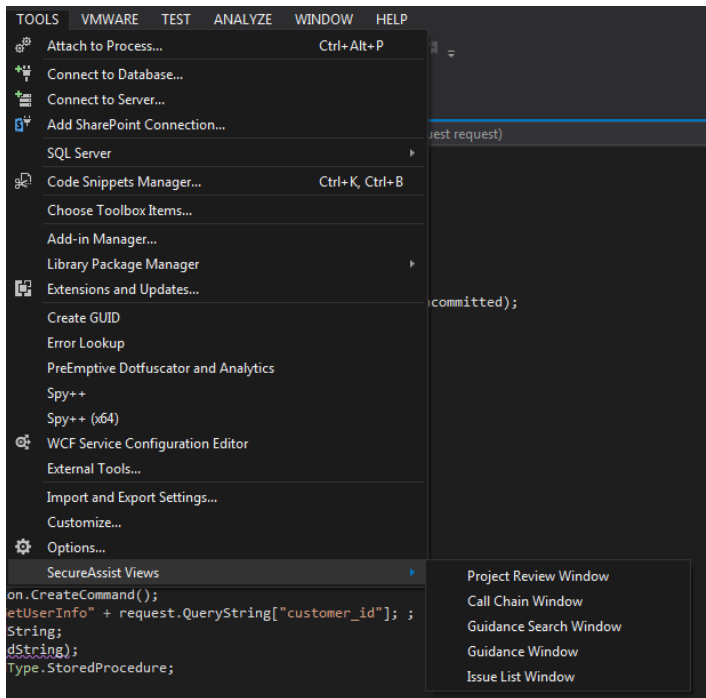
## Activation

1. Open Visual Studio. An activation wizard will be displayed.
2. Click **Activate**. Enter your server URL and domain username on the appropriate screens and click **Activate**.
3. Once your license is activated, you can view your license information under **Tools -> Options -> SecureAssist -> Licensing**.

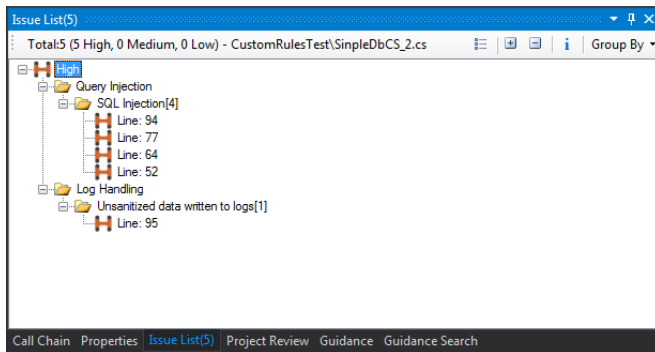
*Review license information.*



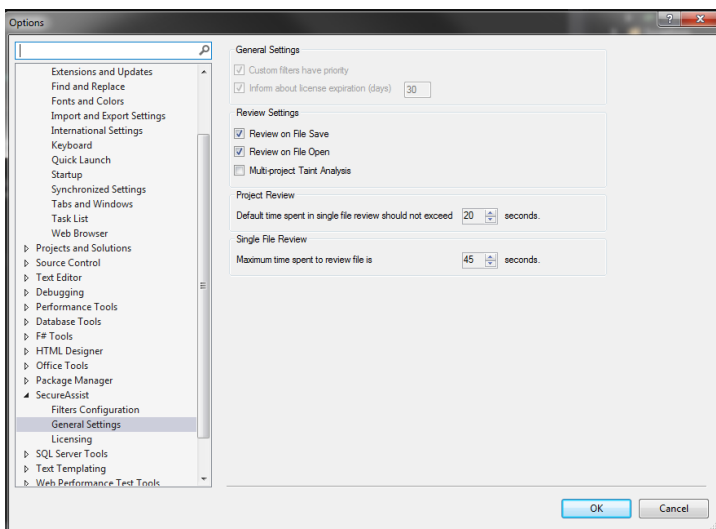
## Getting Started with SecureAssist



Select your views.



Issue List identifies possible problems in your code



Adjust your review settings.

## Opening Views

SecureAssist has several views to work with. The Issue List is the primary view and displays potential security vulnerabilities found in your active file.

The first time you restart Visual Studio after installing SecureAssist, you must manually select at least the Issue List for SecureAssist to function. You can drag and drop views by their title bar to arrange them as you like.

1. Open a file in Visual Studio.
2. Select **Tools -> SecureAssist Views**.
3. Select Issue List and any other desired views. The views you selected will now appear in Visual Studio.

## Scanning

You don't have to do anything special to scan your code with SecureAssist. When you open a file, SecureAssist automatically reviews that file for potential security bugs and populates the Issue List if anything is found.

Scans are also done whenever a file is saved, or when you request one by clicking the **Review File** button in the Issue List view.

You can adjust when scans happen in the SecureAssist Preferences: **Tools -> Options -> SecureAssist -> General Settings**.



## Reviewing and Fixing Issues

If SecureAssist finds an issue, it's indicated in two ways: it's shown in the Issue List view and in the code margin by an icon.

To read an explanation about why that code is a potential security concern, open the Guidance view by double-clicking the line number of the issue in the Issue List.

The Guidance view provides a description of the vulnerability, an example of code that causes it, a preferred code example that you can follow to avoid the issue, and additional information. It's like having a software security expert with you whenever you need him!

```
47 public void SqlInjection3(HttpRequest request)
48 {
49     string userId = "-1";
50     if (request != null && request.Params["userid"] != null)
51         userId = request.Params["userid"];
52     SqlCommand cmd = new SqlCommand(
53         @"Select * from UserInfo where UserId = " + userId);
54     cmd.Connection = connection;
55     SqlDataReader reader = cmd.ExecuteReader();
56     reader.Close();
57 }
58
59 public void SqlInjection4(HttpRequest request)
60 {
61     string userId = "-1";
62     if (request != null && request.Params["userid"] != null)
63         userId = request.Params["userid"];
64     SqlCommand cmd = new SqlCommand(
65         @"Select * from UserInfo where UserId = " + userId,
66         connection);
```

SecureAssist identifies issues in your code.

**SQL Injection**

**Brief Description**

SQL Injection occurs when the user supplies data that is inappropriately used by the application to manipulate the structure of a SQL query.

**Extended Description**

SQL Injection can occur when unsanitized user input data is used to dynamically construct a SQL query. This most commonly occurs when SQL queries are assembled dynamically with runtime data that can include injected SQL control characters such as a single quote ('), an equal sign (=), or comment characters like double dash (--). A successful SQL Injection exploit can: access sensitive data from the database, modify database data, execute administrative operations on the database (such as a database shutdown), and issue commands on the operating system.

**.NET**

**How this vulnerability occurs**

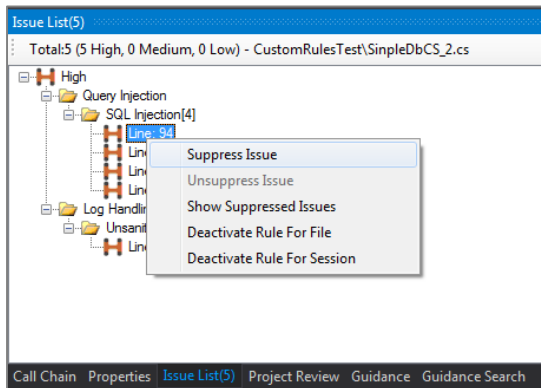
The following example uses a System.Data.SqlClient.SqlCommand object and appends the values of the email and password parameters to a query using string concatenation. This method leaves the query vulnerable to SQL Injection if the email or password parameters aren't properly validated/sanitized.

```
public int Authenticate(string email, string password)
{
    SqlConnection dbConn = new SqlConnection(dbConnStr);
    object returnValue;
    dbConn.Open();
    SqlCommand cmd = dbConn.CreateCommand();
    cmd.CommandText = "SELECT UserId FROM UserInfo" +
        " WHERE EmailAddress = '" + email +
        "' AND Password = '" + password + "'";
    cmd.CommandType = CommandType.Text;
    returnValue = cmd.ExecuteScalar();
    return ((int)returnValue);
}
```

The Guidance view: problem identification, sample code, preferred code you can use, and more.

## Suppressing Issues

Just as a spellchecker in your word processor might identify a misspelling that you don't want to correct, you can suppress an issue that SecureAssist finds if you wish.



*Suppress issues.*

1. In the Issue List, right-click the instance of the issue and select **Suppress Issue**. This will hide that specific issue from view for the remainder of the session.
2. If you change your mind, right-click the issue again and select **Unsuppress**.
3. If you want to stop seeing results for a given vulnerability altogether, you can deactivate the rule: In the Issue List, right-click the instance of the issue and select **Deactivate rule**. You can select whether to deactivate it in just the active file, or for all files for the whole session.

## Getting Help

We hope this document has helped you get started with SecureAssist. You can submit a support request at [support.codiscope.com](http://support.codiscope.com). You will also find other manuals, release notes, system requirements, and more.

Thanks for using Codiscope SecureAssist!