

Kiuwan for Developers for Microsoft Visual Studio

This section shows you how to integrate the Kiuwan Visual Studio Extension (Kiuwan IDE Plug-In) into Microsoft Visual Studio.



The Kiuwan Visual Studio Extension is available only in Viewer Mode and supported for Visual Studio 2015 and 2017.

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Kiuwan IDE Plug-In

Kiuwan allows for a true **shift-left** approach by integrating with all the main IDEs.

Kiuwan for Developers is a **plug-in for development IDEs** that facilitates and automates compliance with **security** normative, **quality** standards and **best practices** for several languages.

It provides the following benefits:

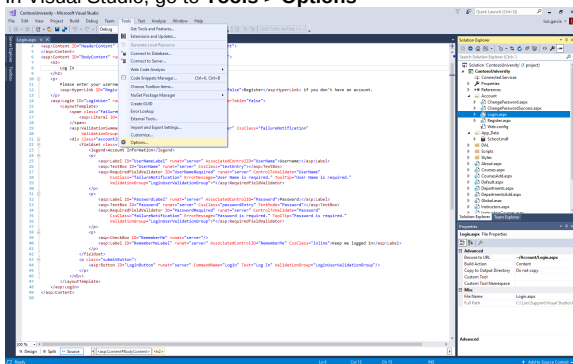
- **Security Vulnerabilities Detection** - The plug-in allows developers to detect and fix security vulnerabilities, such as Injection (SQL, XML, OS, etc), XSS, CSRF, etc., directly within their development IDEs.
- **Adoption of Security and Coding Standards** - The plug-in helps to ensure compliance to standards (CWE, OWASP, CERT-Java/C/C++, SANS-Top25, WASC, PCI-DSS, NIST, MISRA, BIZEC, ISO/IEC 25000 and ISO/IEC 9126) by automating the work. This plug-in connects with Kiuwan and harnesses the power of its quality models to prevent errors and automatically standardize the code.
- **Automatic Error Prevention** - The plug-in implements and monitors compliance to coding standards at the time the code is entered. Thus you can avoid errors and reduce the time and cost of debugging and testing activities.

The Kiuwan IDE Plug-in monitors and reports on the security, quality, and efficiency of your code at the point that it is written. This immediate feedback provides you with the opportunity to improve your code before it is delivered.

Installation

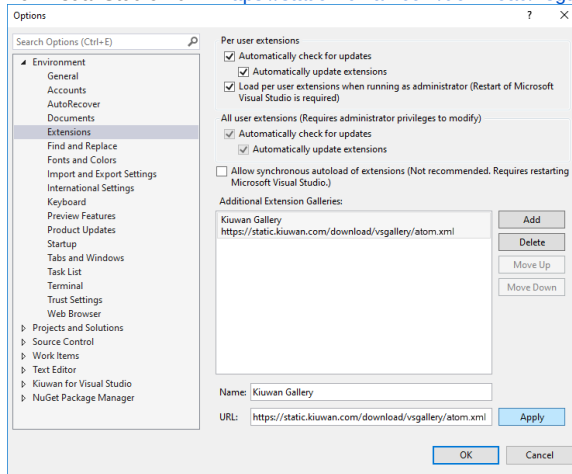
First, configure the Kiuwan Gallery to download the Kiuwan VS Extension from Kiuwan.

1. In Visual Studio, go to **Tools > Options**

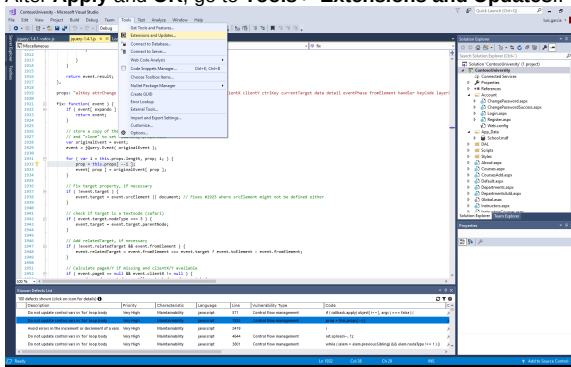


2. Open **Environment >> Extension and Updates** and **Add** a new one using the following URLs:
 - a. For Visual Studio 2015 - 2019: <https://static.kiuwan.com/download/vsgallery/atom.xml>

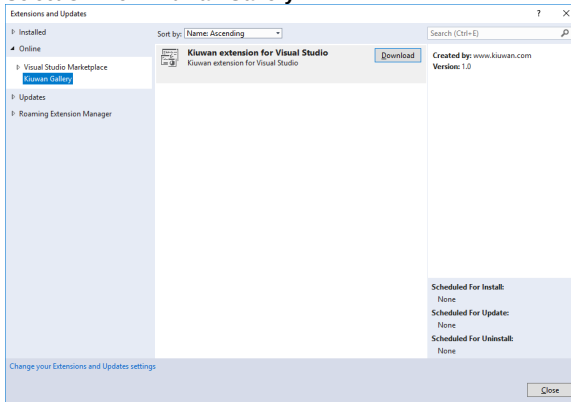
- b. For Visual Studio 2022: <https://static.kiuwan.com/download/vsgallery2022/atom.xml>



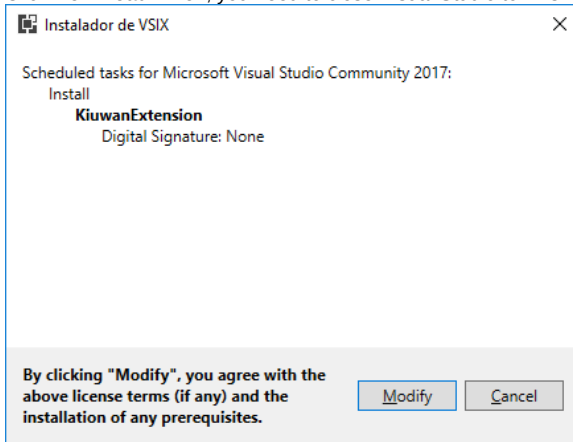
3. After Apply and OK, go to Tools > Extensions and Updates..



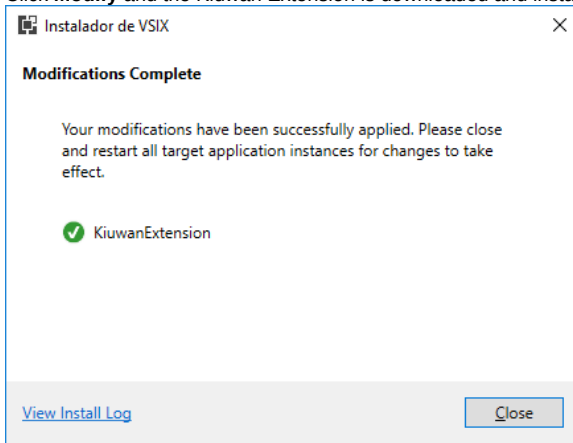
4. Select Online > Kiuwan Gallery



5. Click **Download**. Then, you need to close Visual Studio to finish the installation.



6. Click **Modify** and the Kiuwan Extension is downloaded and installed.



Configuration

Connect to Kiuwan

After installation, you need to **configure the Kiuwan Extension to connect to Kiuwan**. Please, remember that you need to have a valid Kiuwan Account.

Instructions	Image
Go to Tools > Options and select Kiuwan for Visual Studio > Connection properties Proxy settings If you are using a proxy, please configure	The screenshot shows the "Options" dialog box in Visual Studio. The left pane shows a tree view with "Kiuwan for Visual Studio" selected, and "Connection properties" is highlighted. The right pane is titled "Kiuwan Connection Properties" and contains fields for "User:" and "Password:". Below these, there is a section for "Proxy configuration (optional)" with fields for "Protocol:", "Host:", "Port:", "User:", and "Password:". There is also a "Check credentials" button and "OK" and "Cancel" buttons at the bottom.

e Proxy Settings

Click **Check credentials** before applying the changes with **OK**.

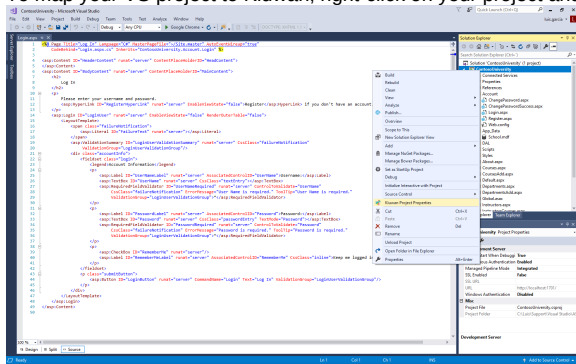
Map your VS Project to Kiuwan Application

After the installation, you are ready to **map your VS project to a Kiuwan application**.

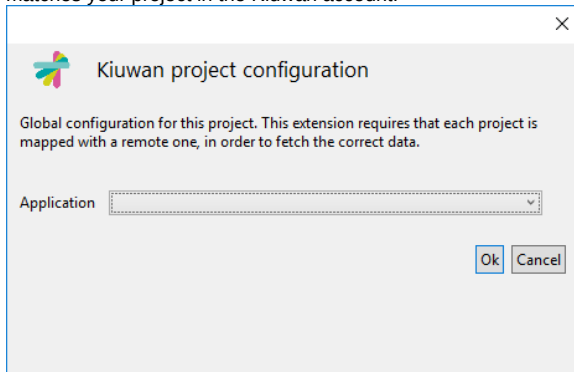


This action allows you to synchronizing defects and vulnerabilities found by Kiuwan in your source code, getting them ready for fixing.

To map your VS project to Kiuwan, right-click on your project and select **Kiuwan Project Properties**.

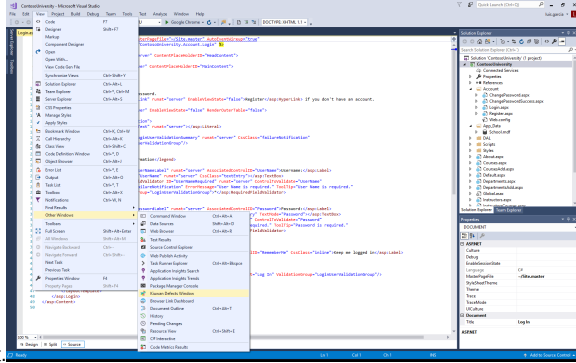


A dialog opens with a combination of available applications where you can select the application that matches your project in the Kiuwan account.



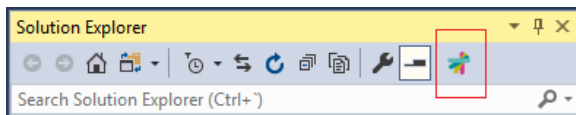
Kiuwan Defects List

Once mapped, go to **View > Other Windows > Kiuwan Defects Window** to open the Kiuwan Defects

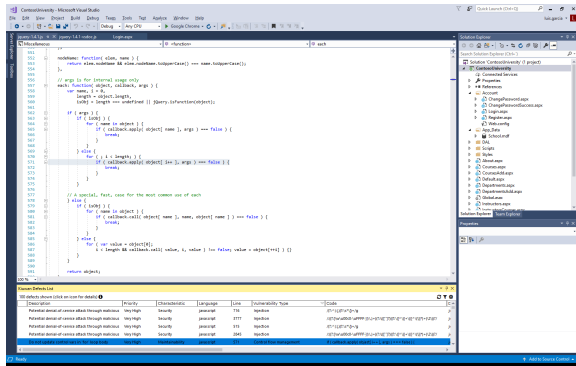


List

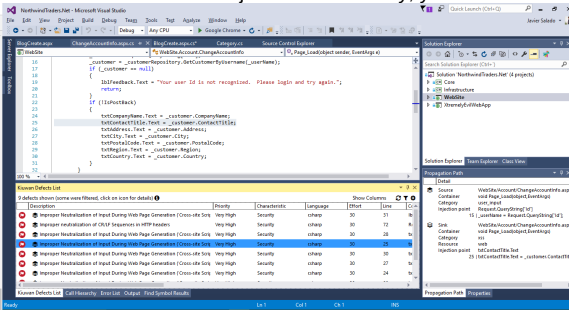
You can also open the Kiuwan Defects List by clicking on the Kiuwan icon  in the **Solution Explorer** toolbar



The Kiuwan Defect List window will appear docked to your VS layout. Double-clicking on a defect will open the file and highlight the line of the defect.



In case the selected defect is a injection vulnerability, you can see the **Propagation Path** at the **Property**



es tab

Right-click a defect for two options:

1. Mark the defect as reviewed
2. Open a browser window to see information about the rule (please use the same credentials as those configured in **Connection Properties**).

Kiuwan Defects List

10 defects shown (some were filtered, click on icon for details)

Description	Priority	Characteristic	Language
Potential denial-of-service attack through malicious regular expression (ReDoS)	Very High	Security	javascript
Potential denial-of-service attack through malicious regular expression (ReDoS)	Very High	Security	javascript
Potential denial-of-service attack through malicious regular expression (ReDoS)	Very High	Security	javascript
ASP.NET Misconfiguration: Creating Debug Binary	High	Security	aspxnet
Prevent MIME sniffing	High	Security	aspxnet
No clickjacking protection configured	High	Security	aspxnet
If authentication is through Forms enable the sending of information through SSL	Normal	Security	aspxnet
Remove ASP.NET MVC version from HTTP headers	Normal	Security	csharp
Set expiration timeout for authentication cookies	Normal	Security	aspxnet

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POTENTIAL DENIAL-OF-SERVICE ATTACK THROUGH MALICIOUS REGULAR EXPRESSION (ReDoS)

Description: Regular expressions are a formal language for identifying strings of text, parsing, and matching them. Most regular expressions engines are built over a non-deterministic Finite Automaton (NFA). They use backtracking and, since regular expressions engines can quickly confirm a positive match, confirming a negative match can take much more longer. There are a few well-known regular expression patterns that, using selected inputs, take a time exponentially related to input size. An attacker with total or partial control over a regular expression may carry out a denial of service (DoS) attack. In certain server-side frameworks (like Node.js), the event loop could be blocked, and the app will be unresponsive. The rule checks whether (1) the regular expression is built using unescaped input (in that case, an attacker may inject a malicious pattern and force a DoS condition when applied to other strings), (2) the checked regular expression contains a structure that may lead to catastrophic backtracking and a DoS condition.

Recommendation: Avoid allowing the regular expression pattern to depend on untrusted input. If an attacker can choose the regular input,

10 defects shown (click on icon for details)

Description	Priority	Characteristic	Language	Line	Severity	Type
Potential denial-of-service attack through malicious regular expression (ReDoS)	Very High	Security	javascript	6	High	Information Security
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ASP.NET Misconfiguration: Creating Debug Binary	High	Security	aspxnet	10	Medium	Configuration
Prevent MIME sniffing	High	Security	aspxnet	11	Medium	Configuration
No clickjacking protection configured	High	Security	aspxnet	12	Medium	Configuration
If authentication is through Forms enable the sending of information through SSL	Normal	Security	aspxnet	13	Low	Configuration
Remove ASP.NET MVC version from HTTP headers	Normal	Security	csharp	16	Low	Configuration
Set expiration timeout for authentication cookies	Normal	Security	aspxnet	17	Low	Configuration

Refreshing Defects List

To be sure you are working on the latest list of defects found by Kiuwan, you need to manually refresh

the defect list. Click the  icon to update the Kiuwan Defects List to the latest content of the Kiuwan servers.

Configuring the Contents of Defects List

Click the  icon to configure the Contents of Kiuwan Defects List.

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Configure Contents for Kiuwan App

Rules: ☐ Obsolete ☐ Efficiency ☐ Maintainability ☐ Reliability ☐ Security ☐ Usability ☐ Performance ☐ Other

Decision: ☐ None ☐ Error

Number of items: 100

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Configuring the Filters of Defects List

Click the  icon to configure Filters in the Kiuwan Defect List.

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Configure Filters for Kiuwan App

Language: ☐ None ☐ File ☐ Project ☐ Solution ☐ Assembly ☐ Class ☐ Method ☐ Property ☐ Event ☐ Interface ☐ Enum ☐ Delegate ☐ Struct ☐ Namespace ☐ Other

Priority: ☐ None ☐ Error ☐ High ☐ Medium ☐ Low

Severity: ☐ None ☐ Error ☐ High ☐ Medium ☐ Low

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Support and Troubleshooting

If you experience problems with the Kiuwan extension for Visual Studio, you can read the Kiuwan [Documentation](#) to find a solution, or if you prefer you can collect troubleshooting information and send it to us. Visit [Contact Kiuwan Technical Support](#) to learn how to contact us. We will address your problem as soon as possible.