# **opentext**<sup>™</sup>

# OpenText™ Core Application Security Remediation Extension for Visual Studio Code

Software Version: 25.2

**User Guide** 

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The title page of this document contains the following identifying information:

- Software Version number
- · Document Release Date, which changes each time the document is updated
- Software Release Date, which indicates the release date of this version of the software

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### **Preface**

### **Contacting Customer Support**

Visit the Customer Support website to:

- Manage licenses and entitlements
- Create and manage technical assistance requests
- Browse documentation and knowledge articles
- · Download software
- Explore the Community

#### For more information

For more information about OpenText Application Security Testing products, visit OpenText Application Security.

### Product feature videos

You can find videos that highlight OpenText Application Security Software products and features on the Fortify Unplugged YouTube™ channel.

# Getting started

This guide describes how to install the OpenText<sup>™</sup> Core Application Security Remediation Extension for Visual Studio Code and use it to upload code for static analysis and open analysis results for remediation.

This section contains the following topics:

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### Product name changes

OpenText is in the process of changing the following product names:

Previous name	New name
Fortify Static Code Analyzer	OpenText™ Static Application Security Testing (OpenText SAST)
Fortify Software Security Center	OpenText™ Application Security
Fortify WebInspect	OpenText™ Dynamic Application Security Testing (OpenText DAST)
Fortify on Demand	OpenText™ Core Application Security
Debricked	OpenText™ Core Software Composition Analysis (OpenText Core SCA)
Fortify Applications and Tools	OpenText™ Application Security Tools

The product names have changed on product splash pages, mastheads, login pages, and other places where the product is identified. The name changes are intended to clarify product functionality and to better align the Fortify Software products with OpenText. In some cases, such as on the documentation title page, the old name might temporarily be included in parenthesis. You can expect to see more changes in future product releases.

# Requirements for using the Core Application Security Remediation Extension for Visual Studio Code

To use the Core Application Security Remediation Extension for Visual Studio Code, you must have the following:

- · An API root URL.
  - For a list of data center API root URLs, see the OpenText Core Application Security User Guide.
- Your OpenText Core Application Security login credentials, personal access token, or authentication token for your OpenText Core Application Security account.

# Installing the Core Application Security Remediation Extension for Visual Studio Code

You can install the Core Application Security Remediation Extension for Visual Studio Code on a computer running Windows, Linux, or macOS. Install Core Application Security Remediation Extension for Visual Studio Code from the Visual Studio Extension Marketplace. See the Visual Studio Code documentation for instructions about how to install an extension.

After you install the Core Application Security Remediation Extension for Visual Studio Code, the Visual Studio menu bar now includes the OpenText Core Application Security Remediation menu.

# Configuring the Core Application Security Remediation Extension for Visual Studio Code

To configure the Core Application Security Remediation Extension for Visual Studio Code connection settings:

- Open VS Code Settings and search for OpenText Core Application Security Remediation.
- 2. Configure the following properties for OpenText Core Application Security Remediation:

Property	Description
Opentext core: Login Method	Select a default login method to connect to your Core Application Security account.  You can select one of the following options:  Username/Password  Personal Access Token  Authentication Token
Opentext core: API URI	Specify the API root URL for the Core Application Security portal.  For more information about API root URLs, see <i>Core</i>

Property	Description		
	Application Security documentation.		
Opentext core: Enable Debug level log	If you encounter any errors, you can enable debug mode to help troubleshoot. When you enable debug mode, Core Application Security Remediation Extension for Visual Studio Code writes additional information to the log files.  Click the <b>here</b> button to view the log file with the Month-Year file name format.		

# Remediating your code

After you select an application release on Core Application Security, the Core Application Security Remediation Extension for Visual Studio Code displays the issues in the **Results** view. This view displays all security issues, organized into tabs, which by default correspond to Core Application Security priority values.

To remediate issues, the project you have open in VS Code must correspond to the application release you opened from Core Application Security (see "Opening application releases" below).

This section contains the following topics:

Opening application releases	7
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# Opening application releases

To view the analysis results, you must first connect to Core Application Security and open an application release.

To open an application release:

- Open VS Code and click OpenText Core Application Security Remediation in the activity bar.
   The OpenText Core Application Security Remediation login page appears.
- 2. From the **Login Method** list, select the login method set up for you in Core Application Security.

3. Specify the following values based on the selected login method.

Login method	Procedure		
Username/Password	Enter the Core Application Security user name, password, and tenant ID.		
Personal Access Token	Enter the Core Application Security username, access token, and tenant ID.		
	<b>Note:</b> Access token refers to the personal access token generated in Core Application Security. For instructions on how to create a personal access token in Core Application Security, see the <i>OpenText™ Core Application Security User Guide</i>		
Authentication Token	Specify the API key and API secret in the <b>Client Id</b> and <b>Client Secret</b> text boxes respectively to connect to Core Application Security.		
	<b>Note:</b> For instructions on how to create an API key and secret in Core Application Security, see the <i>OpenText™ Core Application Security User Guide</i>		

- 4. Click **Sign In** to connect to Core Application Security.
  - The **Select Application & Release** list includes the application and releases that your user account has permission to access.
- 5. Select an application and release from the **Application** and **Release** drop-down lists respectively, and then click **Show Results**.

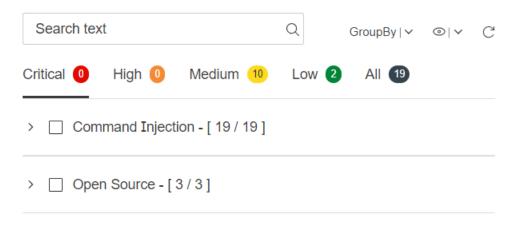
The Core Application Security Remediation Extension for Visual Studio Code displays the Results for the selected Core Application Security application release (see "View and selecting issues" below).

# View and selecting issues

To view and select issues in an opened application release:

From the **GroupBy** list, select an attribute for sorting issues in all visible folders into groups.
 The default grouping is **Category**. For a description of the available **Group By** attributes, see "Grouping issues" on page 10.

2. By default, only open issues assigned to your Core Application Security user account are shown. Click a tab to view the associated issues.

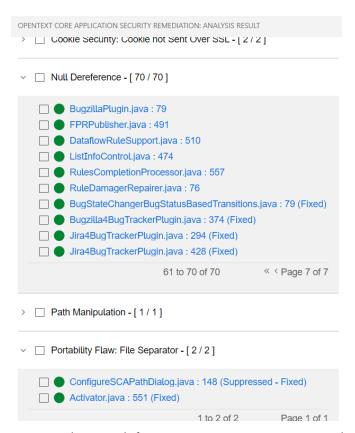


**Note:** The tabs shown depend on your **Group By** selection. It is possible that not all tabs are shown. The tabs shown also depend on the issue template associated with the application release.

- The **Critical** tab contains issues that have a high impact and a high likelihood of exploitation. We recommend that you remediate critical issues immediately.
- The **High** tab contains issues that have a high impact and a low likelihood of exploitation. We recommend that you remediate high issues with the next patch release.
- The **Medium** tab contains issues that a have low impact and a high likelihood of exploitation. We recommend that you remediate medium issues as time permits.
- The **Low** tab contains issues that have a low impact and a low likelihood of exploitation. We
  recommend that you remediate low issues as time permits (your organization can customize
  this category).
- The All tab contains all issues.
- 3. Click to expand a grouping and view the issues it contains.

The Core Application Security Remediation Extension for Visual Studio Code retrieves the corresponding issues from Core Application Security.

To view fixed and/or suppressed issues, click **Fixed** and/or **Suppressed** from the **Visibility** (③) list. The fixed and/or suppressed issues are indicated with a Fixed, Suppressed, or Suppressed-Fixed, enclosed in brackets, in the **Results** view.



You can also search for an issue category or issues within a tab in the **Search text** box.

- 4. Select an issue to view its details in the OpenText Core Application Security Remediation tab.
- 5. Click the **Refresh** icon to sync any changes to the issues in the application release in Core Application Security.

#### **Grouping issues**

The issues visible in the **Results** view vary depending on the selected grouping attribute. The value you select from the **GroupBy** list sorts issues in all visible folders into subfolders. Use the **Group By** attributes to group and view the issues in different ways. The following table describes the available **Group By** attributes.

Attribute	Description	Values
Category	Groups issues by vulnerability category. This is the default setting.	
Auditor Status	Groups issues by Auditor issue remediation status.	Unsuppressed system values: Pending Review, Remediation

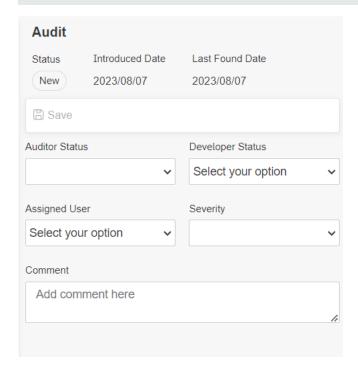
Attribute	Description	Values	
		Required, Remediation Deferred, Risk Mitigated, Suspicious, Proposed Not an Issue	
		Note: Suspicious and Proposed Not an Issue are set by SAST Aviator.	
		<ul> <li>Suppressed system values: Risk Accepted, Not an Issue</li> <li>User-defined</li> </ul>	
Severity	Groups issues by issue severity.	Critical, High, Medium, Low, Best Practice, Info	
Fortify Aviator	Groups issues audited by SAST Aviator.	False, True	
Status	Groups issues by issue status.	New, Existing, Reopen, Fixed/Fix Validated	

# **Auditing issues**

The **Audit** view provides a dashboard of analysis information for the selected issue.

If you have the Edit Issues permission, you can assign a user, set the developer status, and add comments for issues in the Audit Summary view. If you have the Audit Issues permission, you can also edit the issue's auditor status and severity.

**Note:** Any changes you make on the **Audit** tab are automatically uploaded to the application release in Core Application Security.



#### To audit an issue:

- 1. Make sure that the **Audit Summary** view is open.
- 2. From the issues list in the **Results**, select an issue. You can select multiple issues in the **Results** view to make the same edits to multiple issues.
- 3. In the Audit view, select the user to assign to the issue from Assigned User list.
- 4. To change the issue's development status, select the status from the **Developer Status** list
- 5. To change the auditor status, select the status from the **Auditor Status** list.
- 6. To change the issue severity, select an issue severity from the **Severity** list.
- 7. To add a comment for the issue, type your comment in the box at the bottom of the **Comments** area..
- 8. Click Save.

The changes and comments are displayed in the **History** tab.

The Core Application Security Remediation Extension for Visual Studio Code saves your changes for the selected application release.

#### See Also

"Analysis trace" on the next page

"Vulnerability" on page 14

"Recommendations" on page 14

"History" on page 15

#### **Analysis trace**

The Analysis Trace tab on the OpenTextCore Application SecurityRemediation tab displays the relevant trace output. This is a set of program points that show how the analyzer found the issue. VS Code places the focus on the line of code that contains the selected security-related issue.

For dataflow issues, this trace is a presentation of the path that the tainted data follows from the source function to the sink function. For example, when you select an issue that is related to potentially tainted dataflow, the analysis trace box shows the direction of the dataflow in this section of the source code.

#### **Analysis Trace Icons**

The analysis trace icons described in the following table show how dataflow moves in the section of the source code or execution order.

lcon	Description	lcon	Description
:=	Data is assigned to a field or variable	4	Tainted data is returned from a function
O	Information is read from a source external to the code such as an HTML form or a URL	&	A pointer is created
9	Data is assigned to a globally scoped field or variable	*	A pointer is dereferenced
<del>6</del>	A comparison is made	x	The scope of a variable ends
<b>\$</b> ()	The function call receives tainted data	~	The execution jumps
¢0	The function call returns tainted data	А	A branch is taken in the code execution
<b>\$</b> 0	Passthrough, tainted data passes from one place to another	<b>/</b> ∗	A branch is not taken in the code execution
	<b>Note:</b> This is typically shown as functionA(x:y) to indicate that data is transferred from x to y.  The x and y values are one of the following:		

Icon	Description	Icon	Description
	<ul> <li>An argument index</li> <li>return—The return value of a function</li> <li>this—The instance of the current object</li> <li>A specific object field or key</li> </ul>		
<b>4 4</b>	An alias is created for a memory location		Generic
<b>4</b> 0	Data is read from a variable	Olloi	A runtime source, sink, or validation step
<b>+</b> 0	Data is read from a global variable	±	Taint change

The analysis trace box can contain inductions. Inductions provide supporting evidence for their parent nodes. Inductions consist of:

- A text node displayed in italics as a child of the trace node. This text node is expanded by default.
- An induction trace, displayed as a child of the text node (a box surrounds the induction trace).

The italics and the box distinguish the induction from a standard subtrace. To display the induction reference information for that induction, click it.

#### Vulnerability

The **Vulnerability** tab displays the following technical details about the issue: issue summary; explanation of the execution and implications of the issue; instance ID and primary rule ID; and standards and best practices information from Fortify Software Security Research.

#### Recommendations

The **Recommendations** tab displays remediation information and references for further research. The following table describes the sections on this tab.

Section	Description
Recommendations/Custom Recommendations	Describes possible solutions for the selected issue. It can also include examples and recommendations defined by your organization.

Section	Description
Tips/Custom Tips	Provides useful information specific to the selected issue, and any custom tips defined by your organization.
References/Custom References	Lists references for the recommendations provided, including any custom references defined by your organization.

#### History

The **History** tab displays a log of the following issue events: audit changes, comments, and system events (status changes, copy state actions). You can filter the log by the event type (audit, comment, or system event). You can also refresh the history to fetch the latest events.

#### Auditing multiple issues

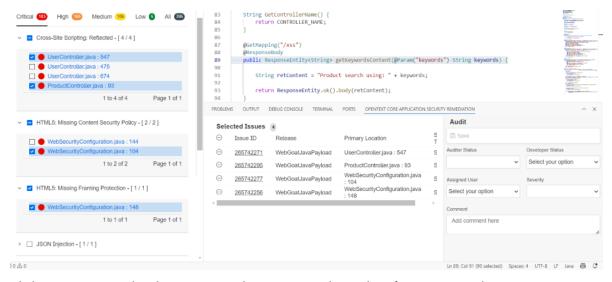
You can select multiple issues in an application release and bulk audit multiple issues.

To bulk audit multiple issues:

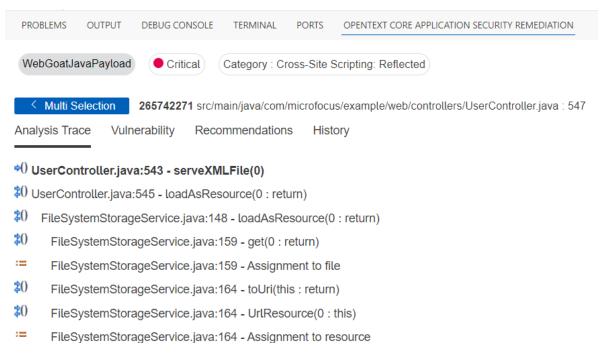
- 1. Open an application release in the Results view (see "Opening application releases" on page 7.
- 2. In the Results view, select the check boxes next to the issues.

The **OpenText Core Application Security Remediation** tab displays the selected issues under the **Selected Issues** area.

The **Selected Issues** area displays the total number of selected issues, issue ID, release, primary location, and scan tool.



3. Click an issue ID under the **Issue ID** column to view the audit information, analysis trace, vulnerability, recommendations, and history for each individual issue.



- 4. Click the **Multi Selection** button to navigate to the previous page.
- 5. In the audit panel, edit the fields as needed. The following fields are available for editing: **Assigned User, Developer Status, Auditor, Status, Severity, and Comments.**
- 6. Click Save.
- 7. Click an issue ID under the **Issue ID** column to view the audit information, analysis trace, vulnerability, recommendations, and history for individual issues.

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