



Using FireEyes II with JAWS

Quick Start Guide

The following instructions explain how to use FireEyes II with the JAWS screen reader. They also generally apply to other Windows-based screen readers such as NVDA. Covered are subtopics for installing, launching, navigating the user interface, adjusting settings, and performing an accessibility analysis.

It does *not* cover using the SimulAT or Scripting functionality, nor does it go into the level of detail that the remainder of this user guide does. It is intended to serve as a quick start guide for users of the JAWS screen reader software.

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Published: June 14th, 2016

This guide online: [Deque University FireEyes II User Guide - Using FireEyes II with JAWS](#)

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Installing FireEyes II

Installation of FireEyes II is slightly different for WorldSpace Comply users (who use an install link from the application), than it is for WorldSpace Attest users (who download an .xpi file from a repository first).

From an Install Link

To install FireEyes II from an install link (Comply):

1. Navigate to the Quick Links section of the Home screen in WorldSpace Comply using the Firefox browser.
2. Activate the **Download FireEyes II** link.

When you activate the FireEyes II install link you should get a message asking whether you want to install the FireEyes II add-on.

3. Tab over to the **Install** button and activate it (or press **Alt + I**).

From an XPI File

To install FireEyes II from an .xpi file (Attest):

1. Sign in to Deque Agora, expand the fireeyesII repository from the Artifacts menu, select the 'fireeyes_ii-x.x.x-fx.xpi' file, then tab to the Download button and activate it.
2. Navigate to the .xpi file on your computer.
3. Press **Enter** to activate it.

Note: If the (.xpi) file extension has already been associated with Firefox, it will open and prompt you to confirm installation by tabbing over to the Install button and activating it (or by pressing Alt+I). If not, you will be prompted to associate a program to use to open the .xpi file type, at which point you must first select **Other**, then locate the 'firefox.exe' file on your system, which is likely located in the 'Program Files (x86)' folder, in a subfolder named 'Mozilla Firefox'.

Verifying Installation Completion

When installation is complete, a process that should only take a few seconds, you should hear a message that the FireEyes II add-on was installed successfully. You can always verify whether installation was successful by trying to open the FireEyes II add-on from the developer tools. For more information, see [Opening FireEyes II](#) below. However, the following steps guide you to verify the installation by finding FireEyes II on the Firefox Add-ons Manager page.

To verify the installation process completed:

1. Press and hold **Ctrl+Shift+A** to navigate to the Firefox Add-ons Manager page.
2. Tab over to the list of installed Firefox add-ons.
Note: This should be two tab stops.
3. Arrow down to locate an entry for FireEyes II.
Note: The list items are in alphabetical order.
4. Listen for the options "disable, remove". When you hear them announced after FireEyes II, the extension is installed and ready to use.

Opening FireEyes II

The FireEyes II extension is located in the Web Developer submenu.

To open the FireEyes II extension from Firefox:

1. Press and hold **Alt+T** to go to Tools.
2. Arrow up until you hear "Web Developer".
Note: Usually you only have to press the Up arrow 3 times (past "options" and "page info"), but it may differ based on your Firefox configuration.
3. Open the "Web Developer" submenu by pressing **Enter** or **Right arrow**.
4. Arrow down until you hear "FireEyes II."
Note: Usually it is located near the top of the Web Developer menu.
5. With focus on "FireEyes II", press **Enter**.

FireEyes II is now open and ready to analyze the webpage that is displayed in the Firefox browser.

Understanding and Navigating the User Interface

Firefox Developer Tools Tabs

On the top you have the Firefox developer tools tabs, as well as the Firefox developer toolbar with some buttons.

FireEyes II Tab

The Firefox developer tabs contain a FireEyes II tab, and it is selected.

FireEyes II Sub-Tabs

The controls for the FireEyes II tab are in a separate frame below, and are visible whenever the FireEyes II tab is selected.

Navigating to the FireEyes II sub-tabs

You can get directly to the FireEyes II controls from the top of the window by pressing the **M** key to jump to the next frame.

Note: The frame is announced as "data/index" frame.

The FireEyes II frame contains the following 5 tabs:

- **Analysis:** Selected by default when FireEyes II is opened. Refer to the [Analyzing a Page for Accessibility Rule Violations](#) heading below for JAWS-specific instructions about using this tab. For additional details, see the [Analysis Tab](#) user guide topic.
- **SimulAT:** For complete details, see the [SimulAT Tab](#) user guide topic.
- **Scripting:** For complete details, see the [Scripting Tab](#) user guide topic.
- **Custom Rules:** Refer to the [Using Custom Rules](#) heading below for JAWS-specific instructions about using this tab. For additional details, see the [Custom Rules Tab](#) user guide topic.
- **Settings:** Refer to the [Configuring Settings](#) heading below for JAWS-specific instructions about using this tab. For additional details, see the [Settings Tab](#) user guide topic.

Sub-Tab Panel Controls

The controls and associated content for the selected tab are located in a tabpanel. You will find the tabpanel after the list of FireEyes II tabs.

Default Tab: The Analysis tab is active by default when you open FireEyes II. This is the tab used to perform accessibility analysis, and is likely to be the tab you will be using 99.5% of the time.

Tab Navigation

To switch to other tabs, do either of the following:

- In **browse mode**, arrow **up** or **down** to the tab you want, then press **Enter**.
- In **forms mode**, tab to the active tab and then use the arrow keys (**right** or **left**) to switch to other tabs (no Enter necessary).

Note: When you do this, you need to force JAWS back into browse mode after selecting the tab you want by pressing the **JawsKey** and ;. In NVDA you force browse mode by pressing the NVDA key and space bar.

Keyboard Layout and Forms Mode

The **JawsKey** is the insert key for desktop keyboard layout, and the **CapsLock** key is the insert key for laptop keyboard layout.

You can select the keyboard layout in JAWS under global settings.

NVDA Keyboard Layout: To get out of forms mode in NVDA, press the **Esc** key or the **NVDA** key and **spacebar**. Note: The NVDA key is the insert key, unless you change to CapsLock, which you can do in the NVDA configuration menu.

Direct Navigation To Tabs

To navigate directly to the tabs:

- Press **C** in JAWS.

Note: There is no corresponding key in NVDA.

Bypassing Firefox Developer Tools Tabs

When the Firefox Developer Tools tabs are visible, you will see those first.

To bypass the Firefox tabs:

- Press the **M** key to get to the FireEyes II frame.

Configuring Settings

FireEyes II comes with a default set of WCAG rules. The WCAG 2.0 AA rules are active by default. Using a rule set other than the WCAG 2.0 AA default involves making optional adjustments on the Settings tab. You may want to connect to your WorldSpace Comply server and select a project to enable download and upload of analysis results, and you may also want to adjust the Standard (rule set) option.

Arrowing down from the last tab (Settings), you will see a dropdown of projects and a Switch button.

Connection Status and Project Selection

If FireEyes II is not connected to a WorldSpace server, the dropdown is announced as "offline no project" or "clickable offline no project clickable", and the Switch... button is announced as "unavailable". For complete details, see [Logging In to WorldSpace Comply](#) and [Selecting a WorldSpace Comply Project](#) respectively.

To quickly get to the Settings tab:

1. Press and hold **Ctrl+Home** to go to the top of the Firefox developer tools window.
2. Press and hold **Shift + C** from the top of the FireEyes II window. This will take you to the Settings FireEyes II tab.
3. Press **Enter** to activate it.

The first thing you will notice in the settings tab is a set of form fields that enable you to connect FireEyes II to a WorldSpace server.

To quickly get to the Server URL input field:

- Press **E**.

Selecting a Rule Set (Standard)

The next section consists of radio buttons with the legend "FireEyes standard."

You can perform off-line analysis using one of the FireEyes II standard rule sets without connecting to a WorldSpace server, or you can use your own custom rule set. For JAWS-specific instructions, refer to the [Custom Rules](#) heading on this page. For complete details, see the [Custom Rules Tab](#) topic within this guide.

Default Standard: If you use FireEyes II out of the box you will perform a WCAG 2.0 AA analysis using the default WCAG 2.0 AA rule set.

To select a Standard:

1. Press **A** in JAWS (or **R** in NVDA).

You will notice that the WCAG 2.0 level AA radio button is checked by default. This is the standard rule set that ships with FireEyes II and is used until you tell FireEyes II to use a different one. You cannot delete rule sets that come with FireEyes II.

2. Select the radio button for the desired rule set to activate it.

No further confirmation is necessary.

Event Recording Options

The last section of content in the settings tabpanel is called "event recording options". It consists of a number of checkboxes where you can configure which events are recorded or ignored when recording scripts. For more information, see [Selecting Event Recording Options](#).

Analyzing a Page for Accessibility Rule Violations

To analyze a page for accessibility violations:

1. Open the page you want to test in Firefox.
2. Open FireEyes II from the developer tools in the Firefox tools menu.

Refer to the [Opening FireEyes II](#) heading above on this page for more information if necessary.

3. Locate the **Analyze** or **Analyze Now** buttons in the FireEyes II Analysis tabpanel (it doesn't matter which button you select, they both perform the same function).

Important Notes:

If you use the **B** key to navigate by buttons, starting from the top, you will hit some Firefox-specific buttons first, 7 of them in fact. The first is "pick an element from the page" and the last one is "dock to side of browser window".

The 8th button should be the "Analyze now" button, which is the one you want to use.

If you get past it to the "Analyze" button (#9) that is fine too.

You can also use the **M** key to get to the FireEyes II frame. Then the next button should be the "Analyze Now" button.

4. Activate the button.

The button's label will change to "analyzing" while a scan is going on, and then to "Analyze" when the scan is completed.

You know that the scan is finished if you can arrow or tab down from the "Analyze" button.

When No Accessibility Violations Are Found

If no accessibility violations were found, the line after the "upload button" should read: "Congratulations! No accessibility violations found. Now you should perform manual testing using assistive technologies like NVDA, VoiceOver and JAWS."

Working With Analysis Results

Export button and violations count: If one or more errors were discovered, the first button after the "Analyze" button is named "Export". It is used to export the results to a .csv file. The total number of errors (aka violations) found is reported in the line after the "export" button. If no accessibility violations were found, you will not see the export button and the number of errors found line.

Download and Upload buttons: Next you will see two buttons: "download..." and "upload...". They will probably be announced as "disabled". These buttons are enabled if your FireEyes II is connected to a WorldSpace server. For more information, see [Uploading Analysis Results](#) and [Downloading Page Issues from WorldSpace Comply](#).

There are two ways to work with FireEyes II analysis results. One is to export them and then use a spreadsheet program. The other is to review them from within the Analysis panel itself.

Exporting Results

When you want to work with analysis results in a spreadsheet program such as Excel which allows for sorting and other data manipulation, you can activate an Export button from the FireEyes II Analysis tabpanel to download a Comma-Separated Value (CSV) file that can be opened by such a program. This is particularly helpful to screen reader users to aid in easy navigation between violations when the results include multiple violations of multiple rules.

To export results to a CSV file:

1. Activate the **Export** button, which appears after the Analyze button when violations were found as a result of the analysis.

A typical Save File dialog box appears.

2. Select a convenient folder, give the file a descriptive name, and save it.

Note: The first time you bring up the "Save File" dialog using the "Export" button, make sure to select the desired folder by shift-tabbing to the folder tree. By default FireEyes II saves the exports in the default download location configured in your Firefox browser settings. After you select a folder once, FireEyes II will remember your folder selection for future exports.

Reviewing Results In FireEyes II

All FireEyes II results are displayed under the "Results" h2 heading. This is usually the only heading on the FireEyes II screen, so using "h" should get you there directly. Keep in mind that the number of violations found is displayed above this heading, after the "Analyze" button.

To review rule violations:

- Starting at the "Results" heading, press the **up arrow** 3 times to see the line where the number of violations found is reported.

FireEyes II displays an ordered list of tests where violations were found, along with the number of violations for each rule. The list is displayed right after the "Results" heading. The rule names in the list are links that when activated show a list of all violations for that rule.

A typical list of violations could look like:

"list of x items"

1

Link: Elements must have sufficient color contrast x violations. (where x is the number of violations).

2

Link: id attribute value must be unique violations

...

To drill down to individual violations:

- Activate the rule link in the list.

Once you have activated a rule link, you will see a panel displaying the first violation for that rule.

Analysis Results Violation Panel Overview

This section describes the sequential information you will encounter as you arrow down within an individual rule violation.

- **Displaying an Individual Violation:** Start at the h2 heading with the word "Results". That heading is immediately followed by the list of rules that produced violations (see previous section for a description and example of what that list looks like).
- **Multiple Violation Navigation and Impact**
 - **Previous button:** At the end of that list you will see a button called "previous". It is disabled when you are viewing the first violation of the rule.
 - **# of Total Violations:** Arrowing down from the Previous button you will see a line that reads: "violation 1 of x" where x is the total number of violations under the active rule.
 - **Impact:** Arrowing further down from that line you will see a line containing the word "impact". The following line will contain the impact rating: One of "minor, moderate, serious, or critical."
 - **Next button:** Then you will see the "next" button. If you are on the last violation for a particular rule, the "next" button is announced as disabled.
- **Description:** Arrowing down from the "next" button you will see a one-line description of the rule that is being violated along with a "More Info" link. As an example, for a violation of the color contrast rule, this line will read "Ensures the contrast between foreground and background colors meets WCAG 2 AA contrast ratio thresholds."
- **More Info link:** The "More info" link takes you to Deque University where you can uncover a lot of context and background info.
- **Applicable Rule Set (Standard) and Success Criteria:** Next you will find a list of 2 items. The first list item contains the active rule set used in the scan. By default this is WCAG 2.0 AA, noted as "wcag2aa". The second list item specifies the success criterion for the active rule (for example, wcag143 for WCAG 2.0 success criterion 1.4.3 - color contrast).
- **Inspect and Highlight buttons:** The "Inspect" button highlights the element in the Firefox Developer tools. We are actively campaigning to make the Mozilla developer tools more accessible, and we hope for a better screen reader experience of this feature in the near future. The second button "Highlight" visually highlights the webpage element in the Firefox window. This functionality is not yet accessible to a screen reader user though we are looking at innovative ways to make it so.

- **Section Navigation:** Several additional h2 headings represent sections of the content pane within a violation:
 - **Target:** The next h2 heading is "target". Underneath it you will find a CSS selector path to the html element where the violation was detected.
 - **HTML:** The following h2 heading is "html". Underneath it you will find a snippet of HTML code including the element where the violation was found.
 - **Summary:** The last h2 heading has the text "summary". Underneath it is an h3 heading with the text "fix any of the following" followed by a list of suggested fixes. The precise layout and wording of the suggested fix depends on the violation, but it is important to include this text in any report or analysis, as it usually helps to pinpoint the exact error and often provides the easiest fix.

Multiple Violation Navigation Notes

Using Previous and Next buttons: If there is more than one violation of a rule, you can use the "previous" and "next" buttons to go to the previous/next violation. When you activate the "previous" or "next" buttons, the updated "violation x of y" line is announced automatically by most screen readers. Assuming you were looking at violation 1 of 10 and press the next button, JAWS should automatically announce "violation 2 of 10". There is no way to quickly navigate to a particular violation for a rule other than using the "next" and "previous" buttons.

Navigation to an individual violation: In order to get to violation 8 of 10 for rule x, you have to click rule x and then click the "next" button 7 times.

About the last violation: Pressing the "next" button for the last violation of a given rule does not automatically advance to the first violation of the next rule. In fact, the "next" button is disabled once you get to the last violation for a rule. You have to navigate back to the list of rules and activate the next rule you want to inspect. That action will bring up the first violation for that rule as previously described.

Repeat until you have gone through all accessibility violations for all rules. If you want to quickly review all the violations in one place, it is best to export the findings to a .csv file, open it in Excel and work from there.

Using Custom Rules

The "Custom Rules" tab is the 4th tab under FireEyes II. If you have written a JSON file of custom rules that you wish FireEyes II to scan for, you use this tab to add that rule set. Then you can select it from the Settings tab. The Custom Rules tab contains two form fields and a Save button.

To add custom rules:

1. Specify a name for your custom rule set in the first input field.

Make sure it only contains letters or numbers (no spaces, dashes or other symbols are allowed as part of the rule set name).

2. Enter (or rather paste in) your JSON rules in the second field.
3. Activate the **Save** button.

You will either get a "success" message, or an error message if you specified an invalid name or used invalid JSON format. If your rule set was successfully saved, you can see its name in the radio buttons in the Settings tab from which you can activate it. You can delete a custom rule set by first selecting its corresponding radio button and then activating the "Delete rule set" button.

For more detailed information about creating and using custom rules, refer to the [Custom Rules Tab](#) user guide topic.