Handbook Scan M. v8

Scan Managers Handbook for Monitor 8

What is the tool? What does it do?

Axe Monitor is a web-based tool that you can use to scan **informational** web systems and get a baseline report on your systems' accessibility. The scans look for violations or possible violations of WCAG 2.1 AA, the standard adopted by the University of Michigan.

Shortcomings

- axe Monitor only scans informational websites that are primarily static. Dynamic websites, which are updated automatically, are not a good fit for axe Monitor. One example of a dynamic website is MCommunity. axe Monitor will also not work for sites that require Duo or other two-factor authentication.
- axe Monitor reports include issues that need manual verification. For example, it can report whether an image has an alt attribute, but not whether the contents of that attribute are appropriate.
- axe Monitor is an excellent automated scanning tool, but even so, it will only catch up to 40% of possible issues on your website. Refer to the Functional Testing section of our website to review our recommendations for more comprehensive testing with the addition of functional testing protocols.

Who the tool is for

The tool is intended to help units and departments with a large web presence make their offerings accessible. Configuring the scans, interpreting the results, and performing the additional functional assessments involve a degree of technical skill, so it is most appropriate for moderately knowledgeable (Content Management Systems, HTML, CSS, some Javascript) technical staff.

Administrative staff have access to high-level overviews of the accessibility of individual sites or all sites in a unit. The data in these overviews can be used to communicate with unit leadership.

Your role

You have one or more accessibility scan projects assigned to you. These will help ensure that your unit's digital materials meet University and external requirements for usability by individuals with various types of disabilities.

You may have been a scan manager for a while or you may be new to it. If you are working on your first scan, this document will help to get you started, if you are experienced, this document will help you transition to the new version of axe Monitor 8.

Throughout this document we will focus on information that will meet most common needs, and provide links to advanced documentation.

Accessing the accessibility scanning service

1. Go to the axe Monitor URL
2. Sign in using Google
3. After a successful sign in, you will see the Scans page, which lists all the scans where you are listed as a coordinator or manager.

If you have problems login in, please contact us via our Digital Accessibility TDx form.

Setting up a new scan project

With axe Monitor version 8, any user can set up a scan, using the following steps:

1. Go to the axe Monitor URL and sign in if needed.
2. Go to the "Scans" tab, and click on the "+ New Scan" button.
3. You will automatically go to the screens listed below under Set up scan settings.

Configuring the scan project

You can configure your own scan, or work with an existing scan project that may have already been created by your unit scan coordinator or a system administrator. Your first step is to verify that the settings are appropriate and will help you and your team accomplish the task of making your websites more accessible.

To configure an existing scan,, access your scan project from the scan list and click on the Edit Scan icon (a pencil). **Any setting not in the documentation listed below can be considered non-essential and can be ignored.**

Set up scan settings

NOTE: Access to Teams (step 6) will likely require assistance from the Admin team. Feel free to contact us via our Digital Accessibility TDx form before setting up a scan.

NOTE: You may be allowed to go through the steps below, and then receive a message that you are not authorized to edit the scan. If this occurs, please contact us via our Digital Accessibility TDx form.

- **General:**
  - **Scan Name:** Change this if it will help your team identify the project and match it to the relevant website more easily.
- **Preset:**
  - **Apply Preset:** We recommend choosing "Yes" and selecting the "University of Michigan Standard Scan Settings" option. This will autofill many of the configurations listed below.
- **Basic Settings:**
  - **axe Core Version:** Make sure this is set to "Latest"
  - **Standard:** Make sure this is set to "WCAG 2.1 Level AA"

    - **Public Share Link and Send to Axe Reports:** on. This will provide you with a share view you can send to others and it will push the data to a dashboard available to leadership
    - **Test for best practices:** We recommend that you check this box. It will add issues to the report that may not be strictly violations, but will improve everyone's experience if you address them. Your score will not be affected.
    - **How would you like to scan these sites?**: This is a useful option for indicating how thorough the scan should be. You may want to adjust this, based on the priority and the complexity of the website being scanned. Standard Scan option is recommended.
- Common Components (link is to Deque documentation):
    - This is an extremely powerful and useful setting and we highly recommend using it. It lets you identify components used throughout the website, such as banner headings, navigation tools, footers, etc. It has the following benefits:
        - Any issue in a common component will be flagged only once, not for every page it appears in
        - It will help you prioritize fixes by identifying low hanging fruit.
        - It will help you determine who to assign issues to: Content Management System (WordPress, Drupal) developers or content editors.
- Advanced settings (link is to Deque documentation):
    - **Scan Scope:**
        - **Page types to perform accessibility analysis on:** This allows you to specify whether axe Monitor should scan Web Pages, PDFs, and PDF/UA violations. We recommend you check the boxes for all three.
    - **URL Scope:** This setting allows you to constrain the scan.
        - **Limit scanning to specific domains:** Specify that the scan should not follow links outside your website. In cases where your website is a subdomain, it allows you to to exclude links to the parent domain. For example, you can specify the domain **arachnids.entomology.umich.edu** here so that links to pages in **entomology.umich.edu** are not followed.
        - **Restrict to folder of the scan URL:** very recommended. Check that box to insure that only pages in your site will be scanned
- Teams & Groups (link is to Deque documentation):
    - **Teams:**
        - Select a Team: Access to scans is based on who is on a team.
            - For existing scans that were created within a v7 organization, a Team name will automatically appear. This name will likely be nonsensical, e.g., Ann Arbor_Admins_262. For now, please contact us via our Digital Accessibility TDX form to get more information about team members, add or remove members, etc.
            - For new scans, you will get access to a full list of nonsensical names. Please contact us via our Digital Accessibility TDx form to find a usable existing group or have a new group set up.
    - **Scan Groups:**

        - Scan groups are for organizing multiple scans. Only Admins are able to access scan groups. Please contact us via our Digital Accessibility TDx form for assistance.
- **Schedule** (link is to Deque documentation)
    - In order for unit scan coordinators, admins and leadership to understand the accessibility health of different parts of the university web presence, it is important that your scan take place with some frequency. Set the scan to happen at least once a month. You can also start a scan manually if necessary, even if it is scheduled.
- **Review Scan Settings & Notifications** (link is to Deque documentation)
    - **Notification options:** You can control who gets notified when a scan completes. This can be you only, team members, or any other user, including non-UM individuals such as contractors or vendors.

Starting a scan

You can always manually start a scan, even if it is also scheduled. For example, you might do this if:

- You have fixed several issues and want to verify these fixes.
- Your team has added new content or functionality and you want to verify that this was done correctly.

Access your scan project by activating its link in the scan list. Once there, click on the Start Manual Run button

See more information on manual runs.

Managing access to the scan

New scans

When you create a scan only you have access to it. In order to share it with others, file a ticket letting us know who needs access to the scan. The information we need is

- Scan name
- Scan ID (the number at the end of the scan URL in Axe Monitor - for example “monitor/scans/725”
- User email addresses

We will create a team Unit_Name_Scan_Name_ScanAdmins (for example Ross_School_of_Business_Zell_Lurie_ScanAdmins) and give that team access to the scan.

Unit scans

It may be useful to have a team that has access to all the scans in your unit. File a ticket with who needs access to all scans in your unit. We will create a team (Unit_Name_Core_Team) and give it access to all current and future scans in the unit. The information we need is

- Unit name
- User email addresses
- Unit scan list

Changing access to unit or specific scans

File a ticket with the needed changes. The information we need is

- Unit or scan name. Preferably the Scan ID (the number at the end of the scan URL in Axe Monitor - for example “monitor/scans/725”
- Changes needed

A note on new users

Users new to the system represent an added wrinkle. When created, an invite is sent to them that they have to accept in order to become full fledged account holders. At that point they can be added to teams, and not before. Please

1. communicate to these people that this is in the works, preparing them for the email invite
2. send us the list
3. we create the accounts/invites
4. after the invite is accepted, we add them to the team you determine

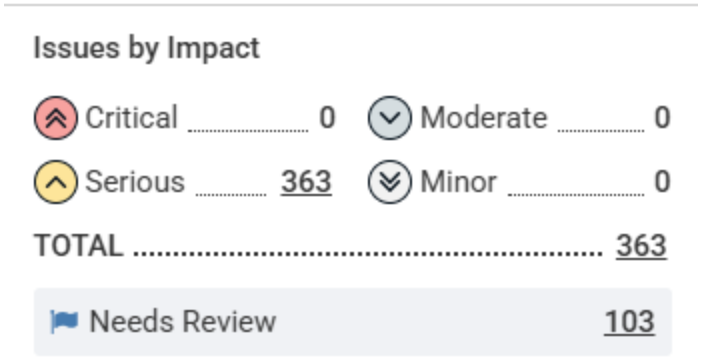
Understanding the scan report

Scan Overview

If you have run the scan at least once, you can access your scan overview by following the project’s link in the scan list. The scan overview helps you understand at a glance the accessibility health of the website being scanned. It also provides information useful for formulating an accessibility strategy and seeing how the accessibility of the website has changed over time. See more information on the scan overview.

Organizing, prioritizing and assigning issues

The Issues view is available from the Scan Overview page. You can click on the Issues tab or click on any of the links in the “Issues by Impact” section of the page. This provides data you can use to improve the accessibility of your website.



The issues list might feel overwhelming, but there are a few ways to sort through it to understand it and make use of it. Some recommended techniques:

Filtering

This is available in the issues view, by clicking on the Filters button on the right side of the page, above the list of issues. This will launch a modal dialog with filter options. The following filters are particularly useful:

- If you want to prioritize issues by impact, select one or more options in the **Severity** section.
- If you are getting started in remediating the website, we recommend unselecting the **Severity > Needs review** option. These are items that the scan engine "thinks" might be issues. You can always address those later.
- If you want to filter on issues assigned to a specific person, choose their email from the Assigned To setting.
- If you want to address a certain type of issue (like color) use the options in the **Issue Group** list.
- If you want to see what issues are coming from your CMS (and conversely, from content contribution), use the options in the **Issue Type** list. This will only work if you have configured the scan to pay attention to common components

There are other filters that you may want to explore. See more information on filtering issues.

Organizing

After you have filtered the issues, click on the Pages link next to any group of issues. You can then start organizing issues and formulating a plan of action. There are many ways of permanently sorting issues. Here are some of the more useful.

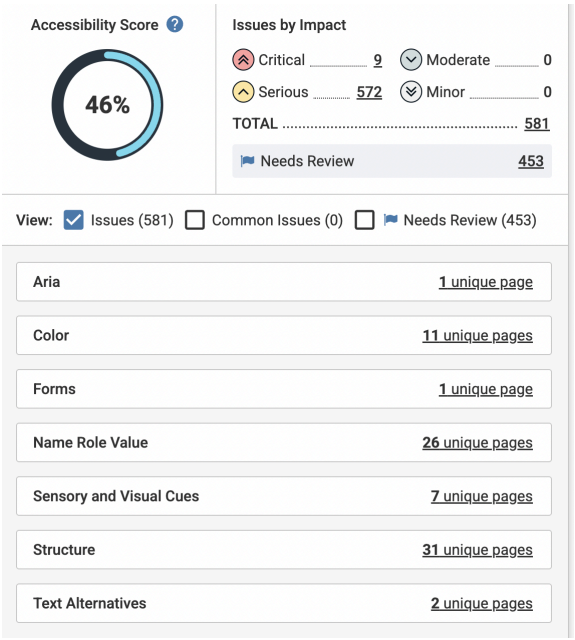
- Assign a filtered list to a given team member. Some possible uses:
    - Assign CMS issues to CMS developers
    - Assign content contribution issues to content editors
    - Assign issues in different parts of the website to the staff in charge of those parts

- Set the status of the filtered issues (Open, Fixed, Ignored)
- Export a filtered issue list to a CSV for sharing

See more information on performing bulk actions on issues

Understanding the issues

Good place to get a grasp of things and start planning is the **Scan Overview** page. Let's take a look at an example



Here we have unselected the "Needs review" because we want to prioritize "for sure" issues

We will also notice some clustering by issue type.

Additionally we are seeing some types of issues that happen in many pages. Other issues affect a small number of pages.

So with a simple glance we have started to formulate a plan leading to remediation.

The **Issues List**, available from the **Issues** tab will help you zero in on a strategy suited to your circumstances.

The issues list groups all issues by issue type. Each type contains the following information: severity, number of pages affected, total number of issues of the type.

In this example you can see that this issue type is serious, it happens in 29 pages, 339 times.

In this example you can see that this issue type is Critical, but it happens only in one page, one time

It is reasonable to conclude that the first issue type is coming from a section of the website that is common to all or a large number of pages. If you are using a CMS or your website relies on

common templates or components this is a very efficient way to start tackling the issues, as changing just the template will remediate 339 issues.

To view the issue type items, details, click on the Expand Issues button (triangle in the last column of the row)

Once the issue is displayed, click on the **View Issue Details** button (eye icon). You will be provided with

- A link to the page where the issue was found
- A succinct explanation of what needs to be fixed
- A more information link that will open a new tab with exhaustive documentation on the issue and how to address it
- Fields where you can add notes and remediation instructions

Identifying where on the page the issue is

If you are familiar with the page, the technical details in the Issue details above will be enough to determine where in the page the issue is located. If not, we recommend that you use the free axe DevTools program to help with this.

- Example: an axe Monitor issue reports that “Ensures <img> elements have alternate text or a role of none or presentation”
    - Click on the link to open the page
    - Run an axe DevTools Full Page Scan
    - Look in the axe DevTools issue list for the issue that axe Monitor reported
    - Select the issue and click the Highlight button.
    - The location of the issue will be highlighted.
    - If there are multiple issues of the same sort you can cycle through them with the next and previous buttons

Identifying what issues are coming from the CMS

Sort issues into template-derived and content-created so that you can assign issues to the different roles that will be addressing them (CMS issues to developers, content issues to CMS editors, for example).

Define Common Components

Note: this process is rather complex and is probably best carried out by staff familiar with the CMS involved. There is also a video for those who prefer that medium.

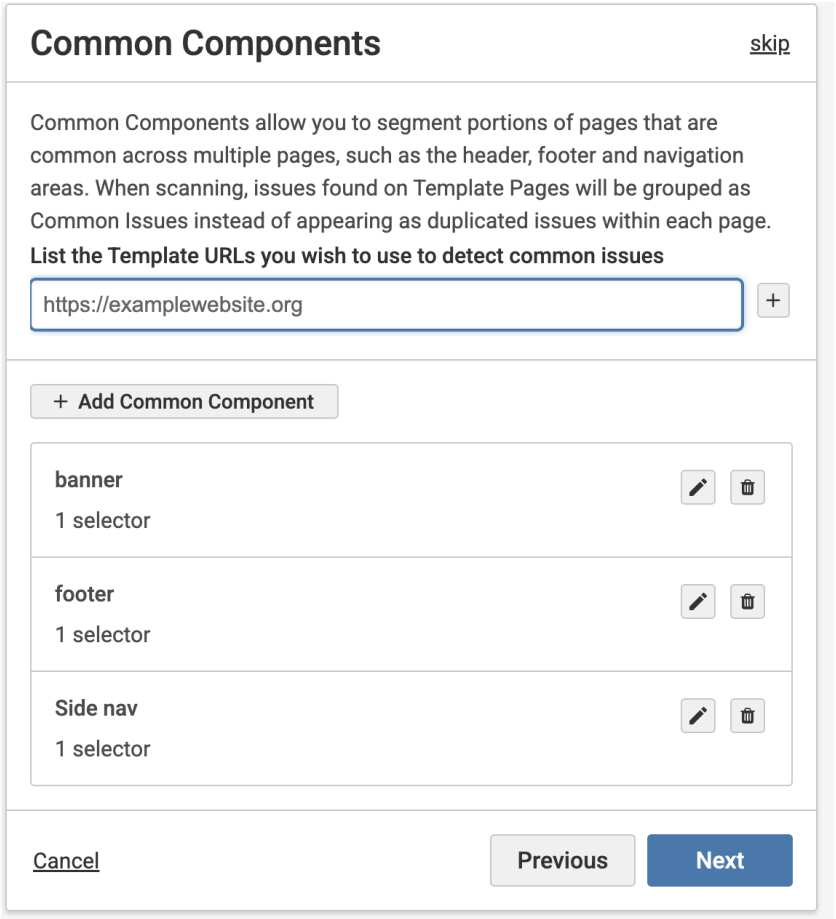
- Navigate to a page that provides a good representation of the template parts. Do not perform this action from the home page.
- Right-click on the page and click **Inspect**
- Using the **Elements** tab of the dev tools, identify the blocks containing CMS blocks. Note down the following for each block:

a. **Name** - Choose something to help you and/or your team, for example: “banner.”
b. **CSS selectors**: This part can be somewhat tricky. Once you’ve identified the block, right-click and pick **Copy > Copy** selector. Then paste into your notes. Here is an example of how your notes might look:
    i. Banner, #header (a block with an id of “header”)
    ii. Footer, footer (a block that was a “footer” element)
    iii. Side menu, nav#sidenav (a nav element with an id of “sidenav”)

Configure scan to flag issues in these components

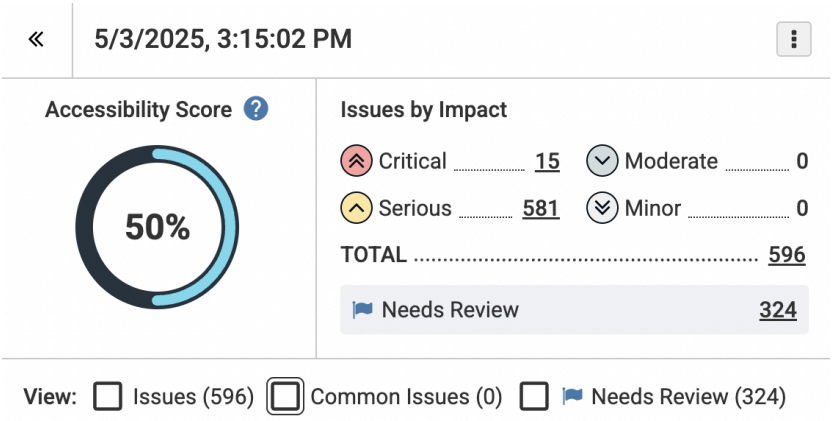
1. In the Scans list, click on the **Edit Scan** (pencil icon) associated with your scan.
2. Navigate to the **Common Components** step
3. Add the URL of the page you used as an example
4. Choose **+ Add Common Component**
5. Give the component a descriptive name, line “Banner”
6. In the **Selector** field add the selector you determined in the previous step (#header)
7. Save
8. Choose **+ Add Common Component** and repeat the process for the other elements you noted.

You will end up with something like this. Click the **Next** button till you get the confirmation step and click **Finish**. Run the scan.

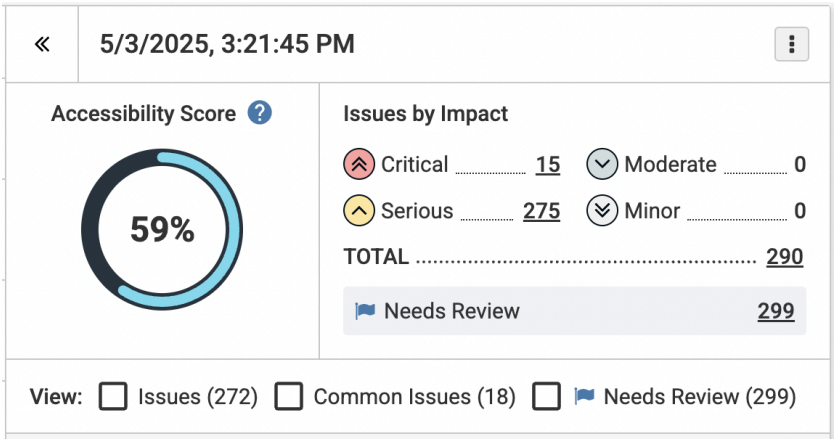


Sorting template issues from content

Before you defined the common components, your **Scan Overview** had something like this. Note that there were no common issues reported.



If the scan encountered any issues in these common components you will see in the Scan Overview page something like this:



Note the following:

There were 18 common issues reported. The issue count also went from 596 to 290, because the common issues are counted only once since it is assumed that you will tackle these once.

When the scan concludes, go to the **Issues** page click on **Filters** and in the dialog select **Issue Type** and pick **Common.** The resultant issues will be ones coming from the common areas you defined.

Measuring progress

In order to see changes through time, access the **Runs** panel. The current and all previous scan results are collected there, allowing you to compare.

A common pattern is the following:

1. Scan
2. Use report to identify and remediate website
3. Scan again.

By comparing the reports from 1 and 3 you can measure the result of your efforts.

Note: ensure that you are comparing apples to apples. If you have changed the scan settings between 1 and 3, make sure you are taking this into account. You may have increased the scope of your scan (number of pages and therefore errors has increased) or made it more strict (added PDF validation, changed the standard from WCAG 2.1 to WCAF 2.2, etc)

Strategies

Tackle Critical and Serious issues first, if possible. From there, the path you follow will depend on several factors. The following are common possibilities:

- Determine what issues are coming from the CMS and which are coming from contributed content
    - If you have the in-house capability to address issues originating from the CMS, this is the ideal starting point. Fixing a framework issue means resolving it across all pages, significantly enhancing both the user experience and the overall system performance.
    - If in-house resources are unavailable to tackle CMS issues, we recommend fixing content-related issues first. At the same time, work on building internal capacity or requesting a budget for a contractor to handle CMS-related concerns. Use the available documentation to help differentiate between CMS and content issues.
- If you're facing a large number of color contrast or visible focus issues and have the ability to override the website's CSS, that's another option to consider. Since CSS changes apply site-wide, a few targeted adjustments can quickly yield significant, measurable improvements.
- Plan a training program for content contributors based on the types of issues you are finding in contributed content.
    - Specific topics (tied to issue types reported by Axe Monitor)
        - Alternative text for images
        - Color
        - Contrast
        - Headings
        - Tables
        - PDF documents
        - Video and audio
    - General topics
        - Web content accessibility
        - Using CMS Editors to Implement Accessibility

Scanning password protected sites

This is useful in two situations

- You have have an intranet and use of it is required or highly recommended in your unit
- You password protect websites in development

In either case this technique will work as long as two factor authentication can be bypassed. It involves writing a script, uploading it to Axe Monitor, and telling the scan to use the script before it starts crawling the site

It assumes a degree of understanding of how web pages work.

Get the script ready

Here is a sample script. Paste the text into a text editor and replace the bold values with yours. Important: keep the whitespace (spaces at the beginning of the line) the same.

```
projects:
  - name: DescriptiveName
    id: DescriptiveID
    pageList:
      - name: Page 1
        url: https://somewebsite.umich.edu
        actions:
          - wait for 2s
          - type "bjensen@umich.edu" into element "#id_username"
          - wait for 2s
          - type "password" into element "#id_password"
          - click element ".btn-submit"
```

Translated into plain language the script says:

- Go to the URL I specified
- Wait 2 seconds till the page is loaded
- Type the user name in the user name field
- Wait for 2 seconds
- Type the password into the password field
- Click on the login button

The only tricky things are the identification of the authentication fields and login button on your website. The Chrome Developer tools will help. The identification relies on the name, the class or the id attribute values of the elements. Id are preferable as there can only be one in a given page.

1. Inspect user name field (right click, choose inspect)

2. The elements panel will open with the markup for that field highlighted
3. Right click on the user name field in the elements panel
4. Choose “Copy selector” -
5. Paste it over the “**#id_username**” text in the file.
6. Repeat with the password and login button
7. Save your file as “filename.yaml” when done. **Note:** some editors will not allow you to save it as a “yaml” document. Save it as a “txt” file and rename it later.

Note: your login page may not have username and password fields with id attributes. You may have to use other selectors like class.

Adding the script to the scan

1. Edit the scan
2. In the “General” step, choose **Add Script**
3. Click the **Next** button till you get the the confirmation step and click **Finish**
4. Run the scan
5. Examine the list of pages in the scan. If you see pages that were password protected pages, you were successful

Dealing with 3rd party plugins

You find that there are a large number of accessibility issues in a 3rd party add-on to the website you manage. This might be a CMS plugin (Wordpress, Drupal) or something else.

These issues are still the unit’s responsibility

- Work with the 3rd party component vendor or maintainer to address the issues
- If the 3rd party component is open source, create issues in their tracking system to get the accessibility barriers addressed. If you have the capacity, fix the issues locally and create pull requests for the provider
- Look for an alternative that offers similar functionality but also provides better accessibility
- You may flag these issues as coming from a 3rd party vendor. This will serve as a reminder that action needs to be taken. It is important to not exclude these issues in calculating the compliance score.
- You may want to call unit leadership attention to the fact that a % of the accessibility issues with your website are being caused by the 3rd party component, what steps you are taking to address the problem, and request any help (funding, staffing) needed

Functional testing

Both axe Monitor and the browser plugin axe DevTools will only flag a percentage of accessibility issues. You will need to perform some functional, hands-on testing as well for full coverage.

The good news is that axe Monitor will flag the issues that are hardest to flag in functional testing. Our functional testing protocol is also very non-technical. The most technical thing involved is inspecting elements with the browser's developer tools.

At U-M, we have a fully functional testing guide that indicates when manual tests are required. We also have a non-technical review guide. Both guides emphasize tests that find issues which automated testing cannot uncover.

Troubleshooting

If the scan fails, the most common reasons are:

- The website URL has changed.
    - Edit the URL in the scan configuration.
- The domain is misconfigured. The scan includes pages outside of the website, for example.
    - Consult the documentation for Advanced Scan Settings.
    - If necessary, open a ticket with ITS.
- The website is blocking scanning. You may have bot detection protection enabled on your website.
    - The static IP address of axe Monitor is **52.206.17.83**. Adding this to your server's whitelist will ensure that scans are not prevented.
    - If your server is behind Cloudfare, something else is afoot, since University of Michigan Cloudfare protected servers are already permitting the scans from Axe Monitor
- You believe one of the issues is a false positive
    - Open a ticket with ITS.