



USING THE MERAKI REPORT WEBSITE

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Local Setup

If you are running this website off your local machine and not a server, you'll need to complete a couple of steps to get it installed, then each time you wish to access it.

Requirements:

- Python 3.0 or higher
<https://www.python.org/downloads/>
- Git
<https://git-scm.com/>

First Time Installation

- 1: Create a folder on your desktop.
- 2: Navigate to that folder using the Command Prompt.
- 3: Type or paste in the following into the prompt:

```
git clone https://github.com/bitprojectspace/MerakiNetworkMonitor
```

This will clone the website to the folder you created.

Running the Server

If you're running the server off a local machine, you will need to do the following each time the command window you'll be using to run it is closed, such as by accident or when the computer is shut down.

- 1: Navigate to the folder you made in the previous set of steps.
- 2: Navigate to MerakiNetworkMonitor, the thing you cloned earlier

- 3: Run the following command:

```
reports\Scripts\activate
```

Be sure to watch the case and type of slashes used – they matter and will spit out an error if they’re not correct, of course. This will activate the virtual environment.

4: Run the following command:

```
py manage.py runserver
```

This is on Windows. If you’re using it on Linux, I’ve found it needs to be “python3” instead of “py”.

Assuming nothing went terribly wrong, your server will now be locally hosted. Look at the IP address it indicates its being hosted at: It may be something like 127.0.0.1:8000. Navigate to this address in the address bar to access the site.

Adding Reports

Before we can read any data, we need to add some. The very first menu option on the homepage will say “Add Reports” – click it, and you’ll be faced with the option of direct input or file upload.

Direct Input

This will give you a giant text box to paste data into. Likely the lesser used option, this one has you open up a Meraki log report file and copying some line(s) you wish to add manually, then pasting them into the box. Text inside the box may not look to be formatted right, but don’t worry – this won’t interfere with operations. Its highly suggested that if you want to add more than a handful of lines, you just use the file upload option instead.

File Upload

Much simpler to use, and suitable for larger files. When you click this option, you will be presented with a browse button. Simply click it and navigate to any text file with Meraki logs in it, then submit the file. Easy as pie!

Processing

Once you submit logs through one of the two options, the log files will be put through a number of functions created to pick out and format useful data from them, and add them to the database. They are made for and will only really work with Meraki log files, and any lines (as the functions work through the

log line by line) that fail to read will be skipped over. Once it's done (which may take a while if the file is massive), it'll display to you how many successful additions there are, and how many were rejected. Every unique MAC address found will be added to the MAC Nicknames table – see below for more information.

MAC Nicknames

Information

When adding new logs through either method, every time a unique MAC address is found, it will be added to the MAC nicknames table. A MAC Nickname is a more human readable (and memorable) name associated with said MAC address. It finds its use when gathering data on reports, because you can use an assigned MAC Nickname instead of its corresponding address whenever the need for one comes up.

For example, imagine there is a MAC Address of FE:80:39:80 or something to that effect. If we add a nickname to it by the name of “Johnny”, we can simply add Johnny as a search term instead of the complicated address whenever we want to gather data on that user.

Adding

On the Homepage is a button named “View and Add MAC Nicknames”. Click it, and you'll be shown a list of all unique MAC addresses that were found in the uploaded reports, added automatically. The default nickname is “None Associated”, which must be changed to use. Click “Edit Nicknames” from there and you'll have fields where you change any of the nicknames to whatever you want. If you wish to link a MAC address to a student, it'll take a bit of work on your end to figure out which MAC address corresponds to which physical device. Add in your nicknames, then click Save, and you're done!

Browsing Reports

Now that we have our data, we can use it to get some useful information. There will be several options, select whichever you need:

[View All by MAC Address or Nickname](#)

Enter a MAC address or nickname, how many entries you want to display, and how many days from today to look back, then hit Submit. You will be shown a table displaying information on the user's activity corresponding to the search terms you gave.

[View All by Access Point](#)

An Access Point is the device the user made use of to access the internet. As of current, this site supports the Fred's Appliance and ACE_MR42 access points. To view all the traffic on each device, enter the name of the device (case sensitive) you wish to look for, the maximum number of entries, and how many days to look back. You'll be shown all the users that have used this device in the chosen time period (either by MAC address or nickname if they have one) and their activity.

[View Top Site Visits by Mac](#)

This will track what websites the user has visited, and how many times they've sent or received a request from one. Enter a MAC address or nickname, max number of entries, and how many days to look back and you'll be shown this data. Nifty to see in an easily digestible way who has been going where and how often.

[View Uploads and Downloads by Mac](#)

As above, enter a mac address or nickname, max entries, and days to look back and you'll be shown the amount of data uploaded or downloaded (in bits) per access request from the user. The vast majority of requests don't upload or download anything, so much of what you see will be "No Download" and "No Upload".

[Device Usage](#)

Device Usage is another option from the homepage. Enter a MAC address or nickname, the access point to look for, and you'll be given a simple summary that tells you roughly how long a user has actively been using an access point, by capturing 30 minute 'sessions' and using the time between them.

Delete Old Reports

The final option on the homepage is to delete **all** reports currently in the system. Due to the volume of reports likely incurred after uploading for long enough and the fact that reports work best as short-term metrics, it's recommended you clear them out once you've got the information you need.

While reports will be deleted, MAC Nicknames will not be, meaning once you set a nickname for an address it will persist for logs added in the future and you will not need to worry about it again.

Contact Information

If you have any questions on working the website, making code changes (the code is commented, however), or if something is terribly wrong, you may contact me at my academic email and I'll try to get back to you if I have the time. Thanks for reading!

- Christopher Snyder

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