AUM User Manual

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Chapter 1: The Awesome Usage Monitor

1.1 Introduction

The Awesome Usage Monitor (AUM) has two main purposes: to track the usage of the tools within the labs workspace, and to restrict access to a specific tool if the user is not trained in its proper use.

There are three main components to the Awesome Usage Monitor.

- 1. The Station Modules
- 2. The PowerSwitch Tail 2
- 3. The User Interface

For setting up any of these devices please refer to their respective section.

1.2 Requirements

In order to begin using the AUM, it is important that you have the following production environment properly installed, updated, and configured for your specific network and security requirements. The AUM repository consists only of the Project files, and does not contain any files from any third party repositories. It is assumed that you have a fresh installation of Ubuntu Server, or equivalent, as well as the following third party applications installed on your production server.

- 1. Ubuntu Server with:
 - a. OpenSSH
 - b. Postfix
 - c. PostgreSQL
 - d. git
 - e. Python3.x
 - f. Gunicorn
 - g. Nginx
 - h. Django 1.1
- 2. An internally or externally hosted domain

1.3 Station Module

The Station Module is an RFID based device used for controlling access and logging usage of your tools within the lab. Users will tap their RFID enabled card or FOB to the Station Module's card reader when they intend to activate the tool. The Station Module then checks the RFID based credentials of the user with respect to the tool it is attached to. If the user is authorized,

the Station Module triggers the PowerSwitch Tail 2 to switch power to the tool. Otherwise, the tool remains unable to be powered on.

1.4 PowerSwitch Tail 2

This is an off the shelf solution for controlling power to a tool. When a "go" signal is sent to the PowerSwitch Tail 2 (PST2), it allows power from the wall to the tool. Otherwise, the power is off.

1.5 User Interface

The User Interface is the web based administration website used to create, modify, and query the underlying database. Through the User Interface you can:

- 1. Add, Modify, View, and Delete a User
- 2. Add, Modify, View, and Delete a Tool
- 3. Add, Modify, View, and Delete a Station Module
- 4. Modify and View TimeStamps for Station Module usage
- 5. Run, Manage, and Export administrative reports.

1.6 The Git Repository

The AUM repository is held <u>on Github</u>, and may require permissions to access the repo. Contact: <u>Chris Clark</u> for any questions or concerns you have with the repository.

Chapter 2: The Web Framework and Database

2.1 The Development Environment

The AUM was developed using Ubuntu Server 16.04.2 with PostFix, PostgreSQL, OpenSSH, git, Python3.0, Gunicorn, Nginx, and Django 1.11. This guide does not cover how to download and install these programs. Nor does the AUM repository contain any files from these third party repositories. The following tutorials may be of assistance if you have never installed Ubuntu Server or any third party applications and still wish to deploy the AUM for your lab.

<u>Ubuntu Installation Tutorial</u> <u>Ubuntu Server Configuration Guide</u>

- PostFix Service Guide
- Git Version Control
- Environment Installation

2.2 The Production Environment

Deploying the AUM to a production environment is easy. Follow these high level steps to deploy and begin using the AUM:

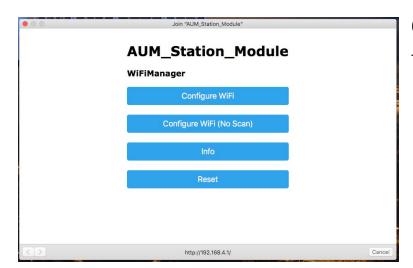
- 1. Start with a fresh installation of the Development Environment on the production server you wish to use.
- 2. Clone the AUM repository to ./aum
- 3. Check out and edit ./aum/aum/settings.py to change the following settings:
 - a. SECRET_KET: Edit this to any randomly generated value. The current value is both insecure and only pseudorandom. The current value was used in the development environment and stored in the repository, every person with access to the repo has access and knowledge of that specific seret_key.
 - b. ALLOWED HOSTS: Edit this to include your domain host entries
 - c. DATABASES: Edit USER, and PASSWORD with the PostgreSQL superuser information you created for your database.
- 4. Save and Check In settings.py
- 5. Reboot your server

If you have properly configured and installed all necessary applications, you should now be able to navigate a web browser to your management URL and begin use the AUM.

Chapter 3: The Station Module

3.1 How to connect the module to the Wifi

The Station Module will automatically try to connect to the last known good Wifi. If it cannot connect, it will restart itself and set up an Access Point called AUM_Station_Module. The AP has a captive portal, so anytime you connect, you will be redirected to the config page. This mode can also be accessed at any time by holding down the "logout" button for a few seconds while cycling power or doing a reset.



Captive Portal Page

-select "Configure WiFi"

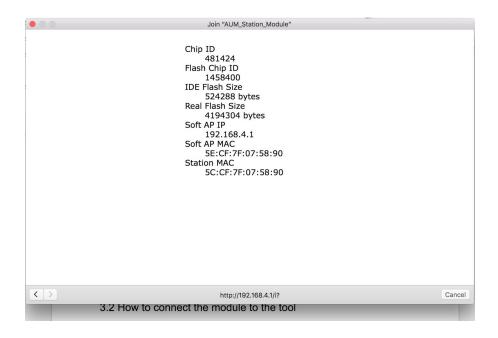
| • 0 0 | Join "AUM_Station_Module" | |
|------------|---------------------------|--------|
| | <u>Pantum-AP-9747AD</u> | |
| | <u>HOME-20F1-2.4</u> | |
| | Whitneysbathtub2.5 | |
| | xfinitywifi 58% | |
| | CenturyLink3458 | |
| | CenturyLink3458 EXT | |
| | CenturyLink2810 | |
| | SSID | |
| | password | |
| | Station ID | |
| | Host Name | |
| | path | |
| | save | |
| () | http://192.168.4.1/wifi? | Cancel |

Configuration Page

- -Select your network
- -Fill in password
- -Fill in station module ID
- -Fill in host name.
- Ex: aummanage.com
- -Fill in path.
 - Ex: \aum
- -click save and the unit will restart

If the network you are trying to connect to requires a username and a password, then you must contact the network administrator and register the station module's MAC address. Usernames and passwords are not supported on this device. To find the Station Module's MAC address:

- In the captive portal, Click on **info**. The Station MAC is listed.



For PSU: Browse to https://intranet.pdx.edu/oit/internet-device-registration and fill out a Internet Device Registration request.

3.2 How to connect the module to the tool

The module controls power to the tool, and therefore "access" through an external isolated relay such as the PST2. The Station Module output can only supply up to 6mA, so a low power draw relay must be used.



3.3 How to link the module to the database

• See Adding a Station Module

3.4 How to add a user to the Authorized User list for a tool

To authorize a new user with a station module:

- An authorized manager will hold the button down and scan their badge.
- A blinking green light will indicate that the new user may scan their badge.
- The Station module will link the user's RFID with the Station Module.
 - This process may take several seconds.
- When the LED returns to a solid green, the user is now authorized to use the tool.

Alternatively you may authorize the user through the User Interface, see <u>Adding a user to the</u> Authorized User list.

3.5 How a user logs into the tool

A user logs into a tool, and thereby gains access, by swiping their badge across the RFID reader. The Station Module will beep to acknowledge that a card was read, and flash green once. After the Station Module receives a reply from the database, it will emit another beep and either show a solid green LED on the SM, and switch power to the tool on, or emit a series of beeps, and remain showing a solid red LED to indicate that the user is not on the Authorized User list.

3.6 How a user logs out of the tool

A user logs out by pressing the button on the front of the SM. If another user scans in while the tool is powered on, and they do not have authorization to use the tool, the station module will power the tool off and deny the user access to the tool.

Chapter 4: The User Interface

The User Interface is still under development. More detailed instructions will be included as part of later revisions to this document. All pages are not final and may be subject to change.

During Development, navigate to www.aummanage.com and use your credentials to login. The sidebar navigation allows you to easily flow from one task to another. Simply select the task you wish to carry out and fill in the accompanying form. After you have submitted your form, a message is displayed letting you know if your submission experienced any errors.

This is the default pages for the AUM User Interface depend on the current user's access level. Upon logging in, a User will be redirected to their profile page, if the user has Manager or higher access, they will be redirected to the "Add User" page.

For shorthand, Manager+ indicates a user that has at least Manager level access.

4.1 Site Navigation

Site Navigation as seen by a Superuser.

The site navigation sidebar allows you to jump from any page to another page. Simply click the desired destination and you will be redirected to that correct page.

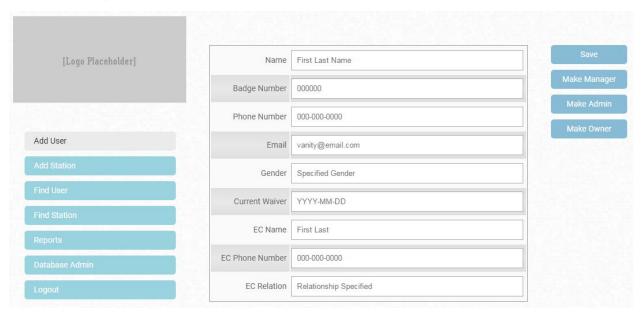
- If any page is viewed by an Anonymous User or User, only "Logout" is visible.
- If any page is viewed by a Manager or Admin "Database Admin" will not be shown.
- If any page is viewed by an Owner or Superuser, all nav buttons will be shown

4.2 Users

The site will have multiple different access levels depending on internal permissions.

- The Anonymous User: This level of user is for a brand new person who has never made an account before. The level is used during the initial stages of user creation and does not require a login.
- The User: The lowest level of access. They may access their user profile and edit information contained within in.
- The Manager: The first level and most extensive of admin access. They may:
 - Add, edit, and delete users.
 - o Add, edit, and delete Station Modules.
 - o Add, edit, and delete Authorized User entries.
 - Run and export reports.
- The Admin: The second level of admin access. They may:
 - Perform any Manager action
 - o Edit the 'is_manager' permission for a user.
- The Owner: The third level of admin access. They may:
 - Perform any Admin action.
 - o Edit the 'is admin' permission for a user.
 - o Backup and Restore the AUM Database.
- The Superuser: The highest level of admin access. They may:
 - o Perform any action.
 - A Superuser has every permission and every access.

4.2.1 Adding a user



Page as seen by a Superuser.

To add a user, fill in all required information, and click "Save".

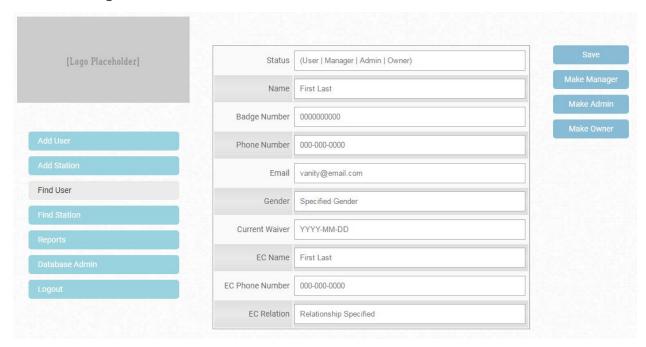
There are two paths to this page:

- > For an Anonymous User, click "New User" from login page.
- > For Manager+, click "Add User" from the sidebar.

Page accessibility:

- This page is not visible to a User.
- If the page is viewed by an Anonymous User or Manager, only "Save" will be visible.
- If the page is viewed by an Admin, "Make Manager" will also be visible.
- If the page is viewed by an Owner, "Make Admin" will also be visible.
- If the page is viewed by a Superuser, "Make Owner" will also be visible.

4.2.2 Editing a user



Page as seen by a Superuser.

To edit a user, fill in all required information, and click "Save".

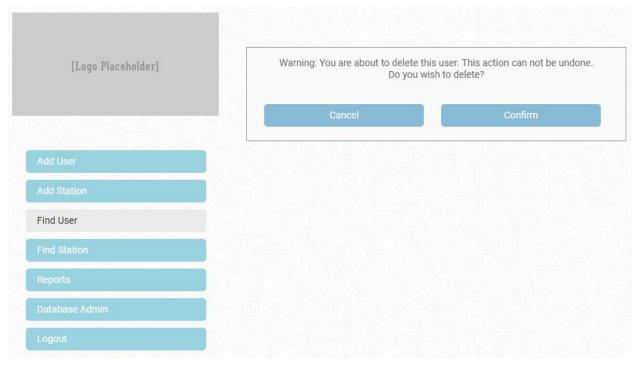
There are two paths to this page.

- > For a User, press the "Edit Profile" button from their profile page.
- > For a Manager+, use the sidebar to "Find User". Once the desired user is located, press the "Edit User" button.

Page accessibility:

- This page is not visible by an Anonymous User.
- If the page is viewed by a User or Manager, only "Save" will be visible.
- If the page is viewed by an Admin, "Make Manager" will also be visible.
- If the page is viewed by an Owner, "Make Admin" will also be visible.
- If the page is viewed by a Superuser, "Make Owner" will also be visible.

4.2.3 Deleting a user



Page as seen by a Superuser.

To delete a user, click "Confirm".

There is a single path to this page:

➤ Use the sidebar to "Find User". Once the desired user is located, press the "Delete User" button.

Page accessibility:

4.2.4 Adding a user to the Authorized User list

Please see Adding a user to an Authorized User list

4.2.5 Searching for a User



Page as seen by a Superuser.

To find a user, fill in all known information, and click "Search".

There is a single path to this page:

➤ Use the sidebar to "Find User".

Page accessibility:

4.3 Station Modules

4.3.1 Adding a Station Module



Page as seen by a Superuser.

To add a Station Module, fill in all required information, and click "Save".

There is a single path to this page:

> Use the sidebar to "Add Station".

Page accessibility:

4.3.2 Editing a Station Module



Page as seen by a Superuser.

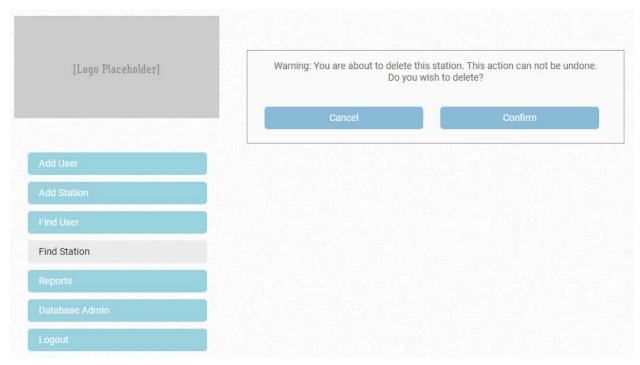
To edit a Station Module, fill in all required information, and click "Save".

There is a single path to this page:

➤ Use the sidebar to "Find Station". Once the Station Module is located, press the "Edit SM" button.

Page accessibility:

4.3.3 Deleting a Station Module



Page as seen by a Superuser.

To delete a Station Module, click "Confirm".

There is a single path to this page:

➤ Use the sidebar to "Find Station". Once the Station Module is located, press the "Delete SM" button.

Page accessibility:

4.3.4 Searching for a Station Module



Page as seen by a Superuser.

To find a station module, fill in all required information, and click "Search".

There is a single path to this page:

> Click "Find Station" from the sidebar.

Page accessibility:

4.4 Authorized User Lists

4.4.1 Adding a user to an Authorized User list



Page as seen by a Superuser.

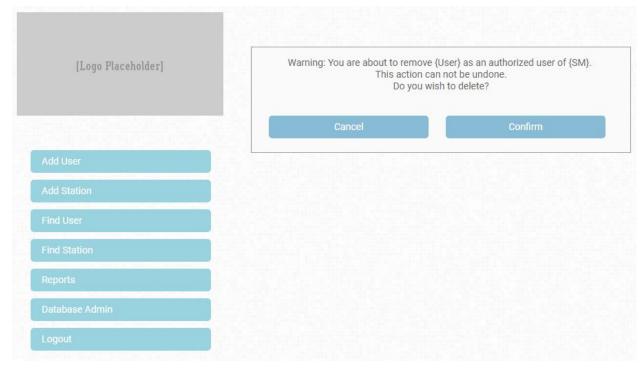
To add a user to the Authorized User list for a specific Station Module, fill in all required information, and click "Save".

There are two paths to this page:

- > From "Find User". Search for the desired User. Once the user is located, press the "Add User to SM" button.
- > From "Find Station." Search for the desired Station Module. Once the Station Module is located, press the "Add User to SM" button.

Page accessibility:

4.4.2 Removing a user from an Authorized User list



Page as seen by a Superuser.

To delete a user from the Authorized User list for a specific Station Module, click "Confirm".

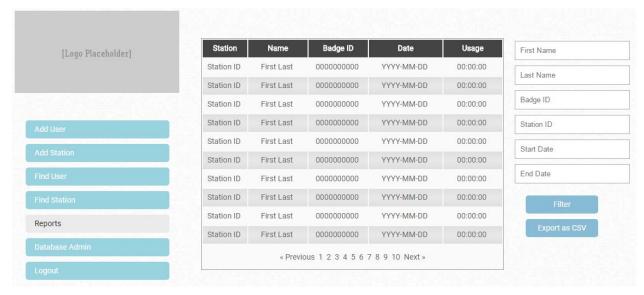
There are two paths to this page:

- > From "Find User". Once the desired user is located, press the "Remove User from Tool" button. Enter the "Station Module ID" and press the "Remove User" button.
- From "Find Station." Once the desired Station Module is located, press the "Remove User from Tool" button. Enter the user's RFID and press the "Remove "User" button.

Page accessibility:

4.5 Reports

4.5.1 Running a report



Page as seen by a Superuser.

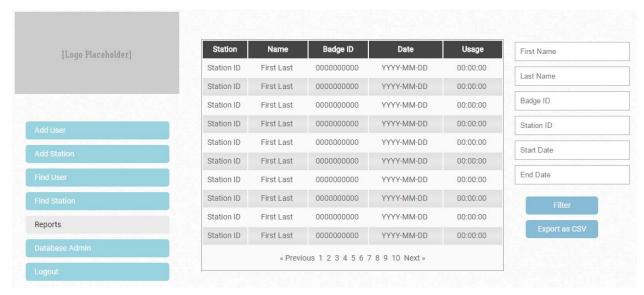
To run a report, fill in all desired filter information, and click "Filter".

There is a single path to this page:

> Click "Reports" from the sidebar.

Page accessibility:

4.5.2 Exporting a report



Page as seen by a Superuser.

To export a report, fill in all desired filter information, and click "Export as CSV". You may also click

"Export as CSV" from any filtered report display page.

There are two paths to this page:

- > Click "Reports" from the sidebar.
- > Click "Reports" from the sidebar. Then click "Filter".

Page accessibility:

4.5.3 Report Examples

Use By Station Module

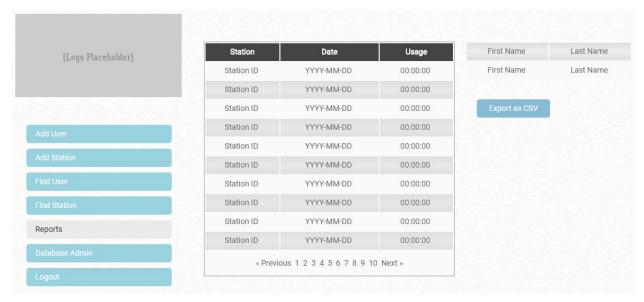


Page as seen by a Superuser.

This report displays the specific usage for a given Station Module.

Page accessibility:

Use by User



Page as seen by a Superuser.

This report displays the specific usage for a given User.

Page accessibility:

Use by Date



Page as seen by a Superuser.

This report displays the specific usage for a given Date range.

Page accessibility:

Use by User and Station Module



Page as seen by a Superuser.

This report displays the specific usage for a given User and Station Module.

Page accessibility:

Use by Station Module and Date



Page as seen by a Superuser.

This report displays the specific usage for a given Station Module and Date range.

Page accessibility:

Use by User and Date



Page as seen by a Superuser.

This report displays the specific usage for a given User and Date range.

Page accessibility:

Use by User, Station Module, and Date



Page as seen by a Superuser.

This report displays the specific usage for a given User, Station Module, and Date range.

Page accessibility:

4.6 Database Administration

4.6.1 Backup Database

Page as seen by a Superuser.

The database backup feature has not been implemented yet.

Page accessibility:

• This page is only visible to Owner and Superuser.

4.6.2 Restore Database

Page as seen by a Superuser.

The database restore feature has not been implemented yet.

Page accessibility:

• This page is only visible to Owner and Superuser.