XIQ Location Builder and AP Mover Python Scripts Guide

by Mike Rieben, SA – 10/16/2023 – v2

Overview:

Aerohive HiveManager Classic & HiveManager NG have been replaced by ExtremeCloud IQ (XIQ). Classic allowed the user to place maps and APs on the location object. When you import that backup file into XIQ. First script will create Site Group / Site / Building / Floor objects and apply maps and adjust scaling. Second script will move APs from the location object to the floor object.

This guide was derived from the Classic to XIQ Migration Guide.

Target Audience: Technical

Prerequisites:

- You're migrating from HiveManager Classic and have imported a backup into XIQ public cloud and see that you have the issue described above. APs and maps are placed on a location object and not on a floor object. XIQ uses APs placed on floor objects to organize the collected data.

Table of Contents

Change Log

Date	Version	Notes
10/25/2022	1	First release
10/16/2023	2	Updated for new Location APIs (updates by Tim Smith)

Scripts

Create Site Group, Site, Building, & Floor Objects

Objectives:

- Expedite creating Site Group, Site, buildings, and floors for your organization if you're missing any
- Fix any Location objects with maps and devices on them since XIQ does not allow this
    - **IMPORTANT**: Devices must be assigned to floor objects in XIQ but Classic GUI allowed devices to be placed on Location objects. After you take a backup and import into XIQ, the devices that are on location objects are brought over but must be fixed after the fact.

STEP 1

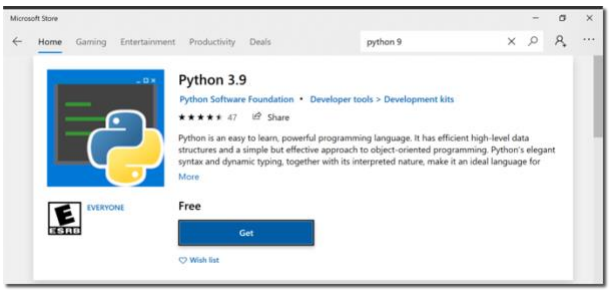
- Your Classic backup should've been imported before this point
- This first script creates your Location, Buildings, and Floors referencing a CSV file. XIQ requires devices to be placed on floor objects. This allows XIQ to properly gather, store and present ML data.
- Download Files (https://github.com/timjsmith24/XIQ_Locations_CSV_Import),
    - Press Code button > Download ZIP >
        - *XIQ-Move-Devices-To-Floor-Object.py*
        - *Location-Building-Floor_Builder.py*
        - *Location-Building-Floor_Tree.csv*
        - *Requirements.txt*
- Extract the zip and place all files in the same folder

STEP 2a – MacOSX BigSur

- Open Terminal app
- Change directory to your file location, this guide uses the downloads folder: `CD \downloads`
    - Verify your files exist in this directory: `ls`
- Check your installed Python version: `python3 --version`
    - Must have a minimum version of 3.8.X installed, 3.10 not supported
    - Install Command Line Developer Tools when prompted
    - Run this once more to confirm: `python3 --version`
- Check your Pip version: `pip3 --version`
    - If you see an Import Error; repair the installation of PIP: (we believe this is a bug by Apple)
      `curl https://bootstrap.pypa.io/get-pip.py -o get-pip.py && python3 get-pip.py`
    - Install required packages: `pip3 install -r requirements.txt`
- Running python commands on a Mac: `python3 <file-name.py>`

STEP 2b – Windows 10 Pro x64

- Search in the Windows Store for Python 3.9 and install it
  - 3.10+ is NOT supported so choose v3.9
  - You will be prompted to login with Microsoft credentials
  - Next window begins to download and install
  - Close MS store window after installation



- Launch **Windows PowerShell,** Run as an Administrator
- Change your directory to be the path where your files are stored: `CD C:\Users\mike\Downloads`
  - Verify your files exist in this directory: `ls`
  - Install required packages: `pip3 install -r requirements.txt`
  - *Requests* and *Pandas* packages will download and install
- Running python commands in Windows: `python3.exe .\<file-name.py>`
  - If you receive an *Error creating building in XIQ - HTTP Status Code: 401 <Response [401]>*, try entering your credentials by typing them in instead of using copy and paste. What happens in the background is the credentials are passed to XIQ with an invalid password.

STEP 3

- Open *Location-Building-Floor_Tree.csv* in a raw text editor, Excel may have reformatting problems upon saving.

- Populate the CSV as shown in the example below for your organization: (image legible on PDF)

```
site_group_1_name(if necessary),site_group_2_name(if necessary),site_name,building_name,address,floor_name,environment,attenuation,measurement,height,map_width,map_height,map_name
HQ,BR1,Site1,Site1Bldg1,"3988 Las Vegas Blvd, Las Vegas, NV, 89119",Floor 1,OFFICE,15,FEET,9,50,50,
HQ,BR1,Site1,Site1Bldg1,"3988 Las Vegas Blvd, Las Vegas NV, 89119",Floor 2,OFFICE,15,FEET,9,50,50,
HQ,BR1,Site1,Site1Bldg2,"3988 Las Vegas Blvd, Las Vegas, NV, 89119",Floor 1,OFFICE,15,FEET,9,500,386.33,Casino Floor_v3.png
,BR2,Site3,SiteBldg1,"1010 J Street Modesto, CA",Floor 1,OFFICE,15,FEET,9,50,50,
```

- **Site_group_1_name** (optional) = Nested Site Group object (Site Group 1)
- **Site_group_1_name** (optional) = Nested Site Group object (Site Group 1 > Site Group 2)
- **Site_name** (required) = Enter site object name
- **Building_name** = Enter building object name
- **Address** = Enter building address that will be applied to the building object
- **Floor_name** = Enter a floor name. If multiple floors, enter a unique floor name along with the same location & building names
- **Environment** = This verbiage is specific, use *OFFICE* and change in XIQ after creation if desired
- **Attenuation** = Enter a value for dB loss between floor (default: 15)
- **Measurement** = FEET or METERS

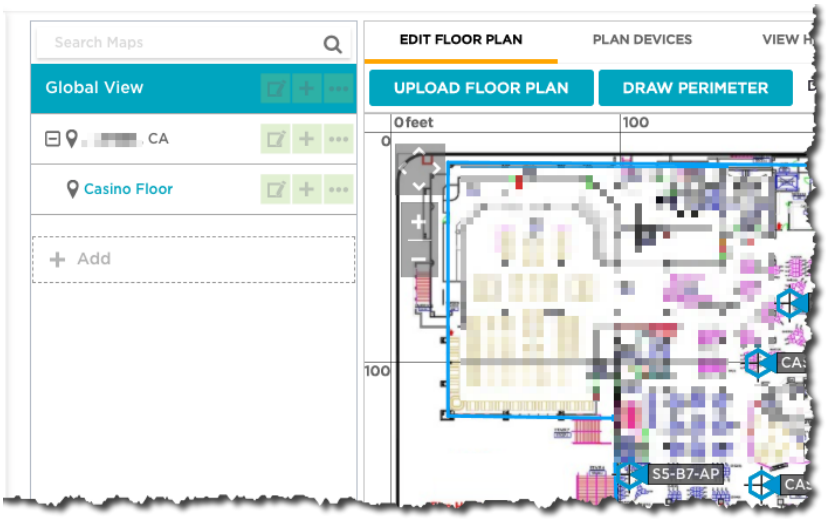
- **Height** = Enter an AP placement height per floor
- **Map_width** = This value will be acquired later, use any value for now
- **Map_height** = This value will be acquired later, use any value for now
- **Map_name** = This value will be acquired later, leave blank for now
- Do not add a comma to the end of a row if you're using a map name

*** Do not run the script at this time ***

Fix Map & Devices on Location Objects in XIQ

STEP 4

Do you have maps assigned to a Location object as shown below? Location objects have a pin drop/teardrop icon next to the name.

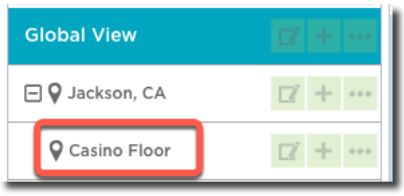


If so, complete these steps before running any scripts. If not, you may skip this step/section and create your hierarchy.

Note: Walls objects are not moved. APIs don't exist today for these objects.

First, locate the location object that contains a map with devices

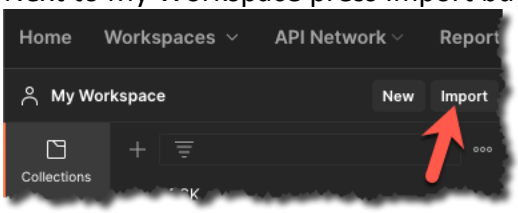
- Click on the (e.g. Casino Floor) location object (where your floor plan map is with APs) and copy the numeric value in the URL

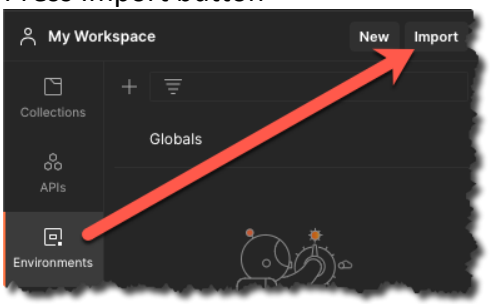


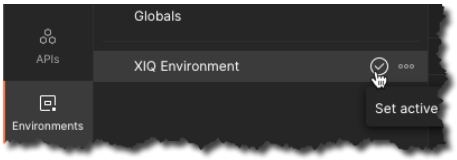
https://rdc.extremecloudiq.com/#/plan/723491536096601/overview

Copy: 723491536096601

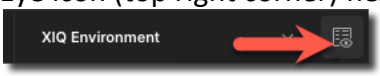
STEP 5

- Download the free **Postman** app here: https://www.postman.com/downloads/
- You'll use Postman app to grab the map name and size
    - Download our XIQ Postman Framework here: https://github.com/extremenetworks/ExtremeCloudIQ-APIs/
    - File: **XIQ APIv2 22r4.postman_collection.json** (always look for the latest version)
        - Simplest way to download the file is to press the Raw button (top right corner of the code window)
        - Save Page As > XIQ APIv2 22r4.postman_collection.json
    - Import framework into Postman
        - Collections menu (left column
            - Next to My Workspace press Import button
            - 

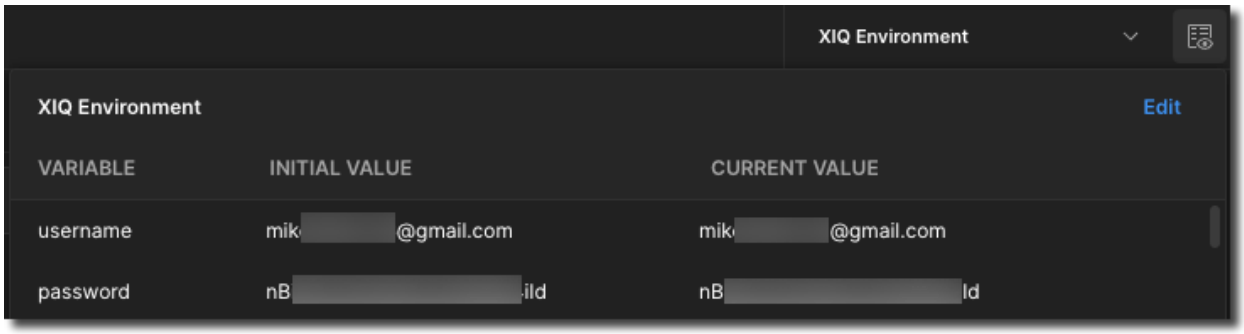
            - Complete importing the framework
    - Download our XIQ Postman Environment Variables here: https://github.com/extremenetworks/ExtremeCloudIQ-APIs
    - File: **XIQ Environment.postman_environment_22r4.json** (always look for the latest version)
        - Simplest way to download the file is to press the Raw button (top right corner of the code window)
        - Save Page As > XIQ Environment.postman_environment_22r4.json
    - Import environment variable into Postman
        - Environments menu (left column)
            - Press Import button
            - 

            - Complete importing the environment variable
            - Set the XIQ Environment Active > mouse hover over the checkmark area and click
            - 

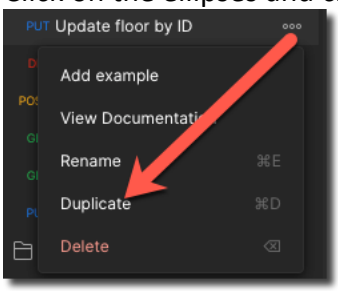
- Collections: XIQ APIv2 22r4 > Authentication > Login Basic Authentication
- Click Eye icon (top right corner) next to XIQ Environment > Click Edit (blue)



- Edit user name and password in initial and current value fields. These are your XIQ credentials of an XIQ account. SAML is not supported.
- Press **Save** then close the XIQ Environment variables tab



- Login Basic Authentication tab
- Press **Send** button
- Authenticates using your XIQ credentials and you should receive an access_token in the body which is stored in the Environment Variables: *jwttoken*
- Click Eye icon (top right corner)
- Edit **floor_id** field in initial and current fields of the Location ID object: 723491536096601 (get from step 4 above)
- Press **Save** button then close the Environment Variable tab
- Menu: XIQ APIv2 22r4> Location > PUT-Update floor by ID
- Switch to the Body sub-tab under the PUT : API URL bar
- Click on the ellipses and click Duplicate:



- PUT – Get floor info by ID
- Edit the body to be just installation height

- Press **Save** button
- Press **Send** button
- Output → → →

- Open the *Location-Building-Floor_Tree.csv* file in a raw text editor
- Enter the information obtained in Postman for your new Location, Building, Floor

- Repeat for all other locations that contain a map and devices
- It's okay that a floor does not have a floor plan image. Adding an image name is optional.

STEP 6

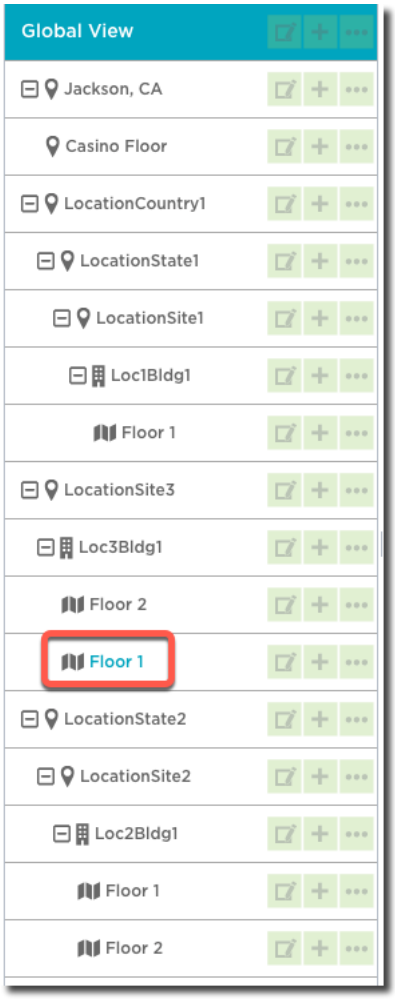
It's time to create your hierarchy then you can move devices.

Run script: `python3 Location-Building-Floor_Builder.py`

- Enter your XIQ email address
- Enter your XIQ password
- Enter the CSV file name including the extension: *Location-Building-Floor_Tree.csv*

Navigate XIQ Menu: ML Insights > Network 360 Plan and review the results. If you do not see any changes refresh your browser.

Verify the floor plan map that was originally in your Location object is now on your new floor object as shown in the example → → →



The next step is to move your devices from the old Location object to the new Floor object.

- Get your (e.g. Casino Floor) location object (where your floor plan map is) ready, Copy: 723491536096601
- Click on the (e.g. Floor 1) Floor object (where your devices will move to) and copy the numeric value in the URL

https://rdc.extremecloudiq.com/#/plan/723491536096702/overview

Copy: 723491536096702

Run script: `python3 XIQ-Move-Devices-To-Floor-Object.py`

- Enter your email you use to login XIQ with:
- Enter your password:
- Enter the location ID where the devices are currently: 723491536096601
- Enter the floor ID where the devices will be moved to: 723491536096702

REPEAT for each location. It's important to do this methodically. Control the variables for a successful migration.

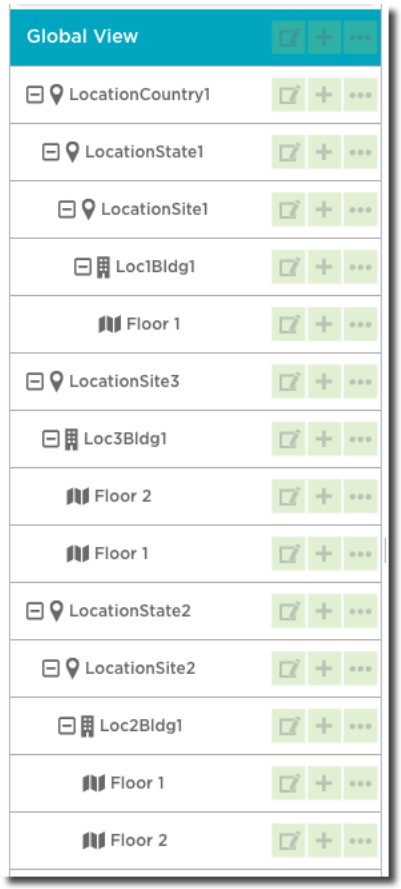
STEP 7

Verify your maps and devices have moved.

- Click on the old Location object and verify all devices have been removed
- Click on the new Floor object and verify the map and devices are present

WARNING!!! Wall objects can't be moved programmatically at this time. Manually recreate perimeter and walls before the cleanup stage.

- Clean up by deleting the old location object(s) since this is a potentially corrupt object in XIQ
    - If there are objects below this location you must either delete them or move them before XIQ will allow you to delete the old location object from the database



Admire your finished work knowing you saved time and effort by using Python and API calls.

End Guide

Good luck and be safe out there.

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