C60 Series
C62 Series
D60 Series
H60 Series
L2 PRO Gigabit PoE Switch Series

Network Topology System
User Manual

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NTS Overview

1. NTS is an intelligent management tool embedded in switches to intuitively help IT/TS reduce support cost/time/effort.

2. All devices connected to the switches can be discovered and displayed by NTS automatically using standard networking protocols such as LLDP, ONVIF, etc.

3. Users can operate the features below via an intuitive web GUI.

    - Power down, remotely, the IP cameras, NVRs, or any PoE devices.

    - Identify where exactly the broken cable is, remotely.

    - Detect abnormal traffic issues on IP cameras/NVR.

    - Monitor devices status intuitively, e.g. link up, PoE power, traffic, etc.

4. NTS supports up to 255 devices within 1 subnets.

The embedded Network Topology System is designed to be extremely easy-to-use/manage/install IP Phone, IP Cam, or Wifi-AP for enterprise applications.

User can deploy IP Device through Topology/ Floor/ Map View to installation location, and through Diagnostics and Traffic Monitor, they may also check link status and monitor throughput as well.
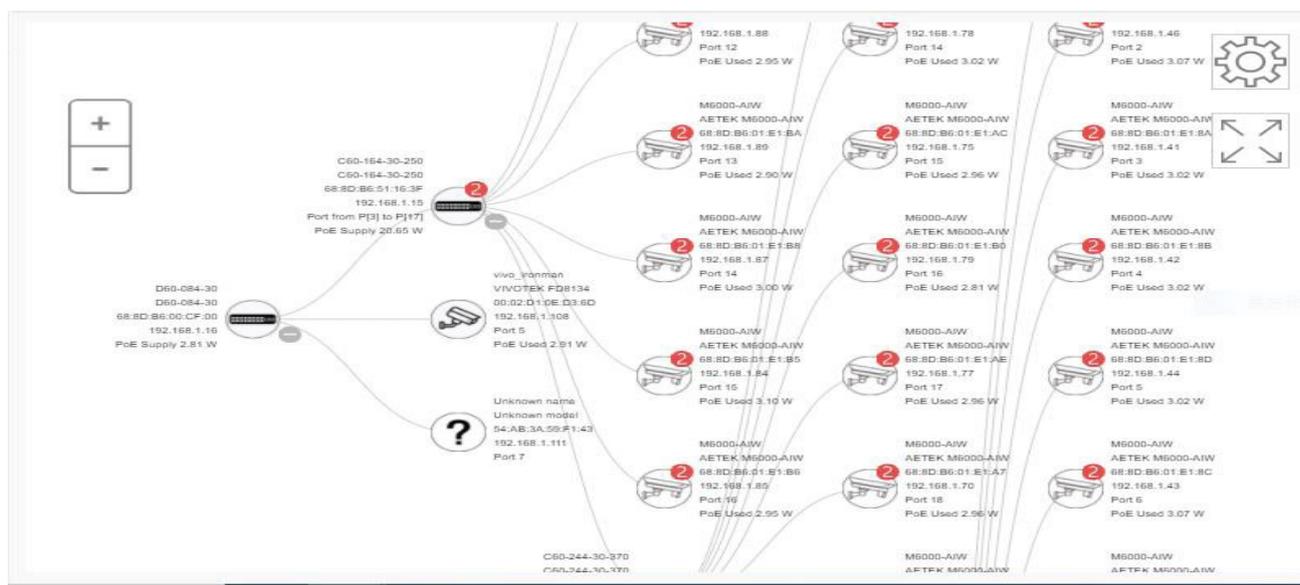

Figure 1: The NTS Overview

Graphical Monitoring

Topology View

NTS can automatically discover all IP devices and display the devices by graphic networking topology view. User could manage and monitor them by the Topology View, such as to remotely diagnose the cable connection status, auto alarm notifications on critical events, remotely reboot PoE device when it's not alive. Therefore, the user can apply NTS platform to solve the abnormal issues anytime and anywhere by tablet or smart phone, and keep the network works smoothly.

Click Graphical Monitoring Topology View, you can see a visual view of the network topology.
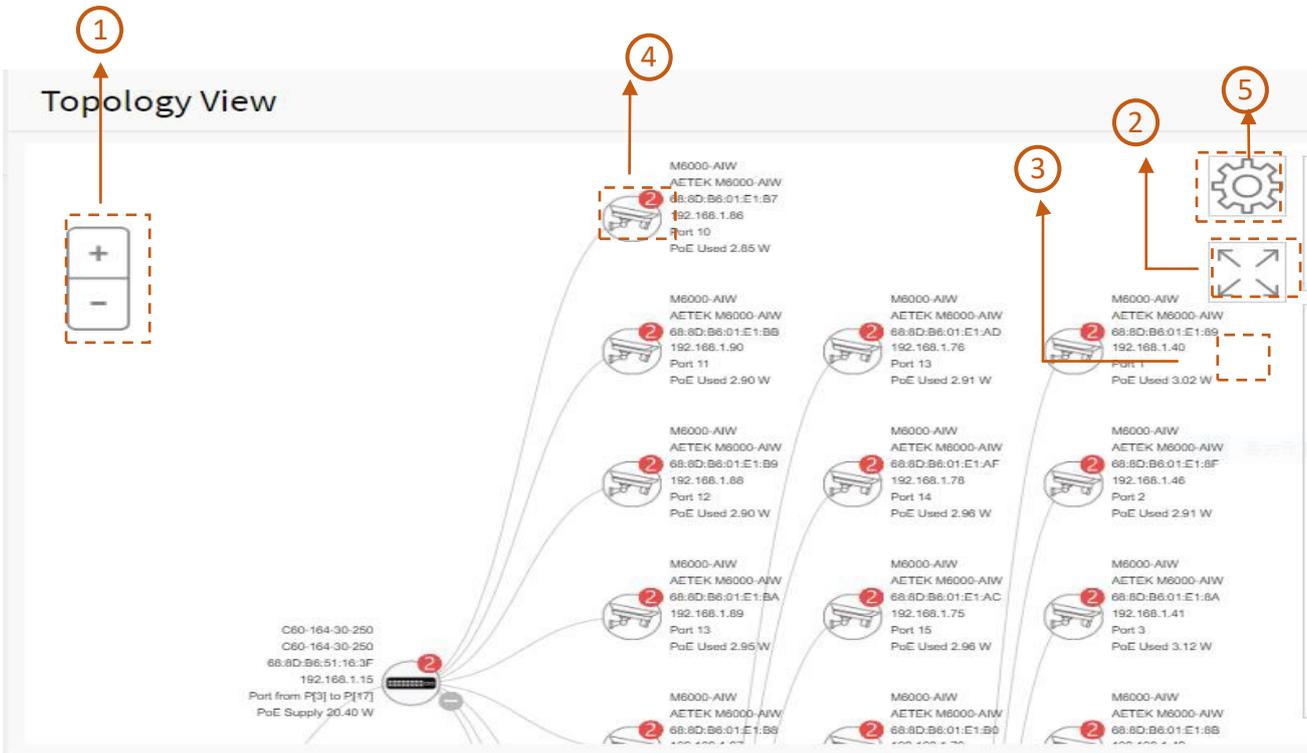

Figure 2: The Topology View

Parameter description:

1. Icon with plus and minus marks: Zoom in and zoom out the topology view, user can scroll up/down with mouse to achieve the same purpose.

2. Icon with screen view type: Click it to change to Full Screen View of Topology or return to the Normal View.

3. Icon with information list: User can select what kind of information should be shown on the topology view of each device. Up to 3 items can be selected.

4. Device icon

    I. Device category

    - : It means the device is Switch.

    - : It means the device is PC.

    - : It means the device is IP Cam.

    - : It means the device is IP Phone.

    - : It means the device is AP.

    - : It means the device is Router.

II. Device Status

- Icon with black mark: Device link up. User can select function and check issues.

- Icon with red mark: Device link down. User can diagnose the link status.

- Icon with numbers: It means some events happened (e.g. Device Off-line, IP Duplicate...etc.) on the IP device, user can click on the device icon to check events in Notification.

- Icon with question: It means the IP device is detected by NTS, but the device type can't be recognized which will be classified as an unknown device type.

III. Device consoles

- To left-click any device icon to display the device consoles for further actions:

Figure 3: The Device Console

- Dashboard Console: it displays device info and related actions for the device.

  - ◆ Different device type supports different function:

    - - If an IP device is recognized as NTS switch, it will support "Upgrade", "PoE

Config" function.

- If an IP device is recognized as PoE device, it will support more "PoE Reboot" function in addition "Upgrade".

◆ Device Type: It can be displayed automatically. If an unknown type is detected, user can still select type from a pre-defined list.

◆ Device Name: Create your own Device Name or alias for easy management such as, 1F_Lobby_Cam1.

◆ Model Name, MAC Address, IP Address, PoE Supply and PoE Used are displayed automatically by NTS.

◆ Http Port: Re-assign http port number to the device for better security.

◆ Login Login: Click the Login Action Icon to log in the device via http for further configuration or status monitoring.

◆ Upgrade Upgrade: Click it to upgrade software version.

◆ PoE Config PoE Config: Click it to configure the PoE function, enable/disable PoE Auto Checking or enable/disable PoE mode for per port.

Figure 4: The PoE Configure

◆ 🔧 Diagnostics: Click Diagnostic Action Icon to perform the cable diagnostics, to exam where the broken cable is, and, check if the device connection is alive or not by ping.

- ● Cable Status:

  - Green icon: Cable is connected correctly.

  - Red icon: Cable is not connected correctly. User can check the distance info (XX meters) to identify the broken cable location.

- ● Connection:

  - Green icon: Device is pinged correctly.

  - Red icon: Device is not transmitted /receiving data correctly. Which means it might not be pinged successfully.

Figure 5: The Diagnostics

◆ ⏻ PoE Reboot: Click Reboot Action Icon to reboot the device remotely so as recover the device back to its normal operation.

◆ ⛓ Parent Node | Icon with blank node: When NTS switch detects more than two IP devices from the same port, switch can't resolve this IP device's layout, instead, it will show a blank node to present this situation. User can use "Parent Node" function to adjust layout in Dashboard.

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- Notification Console: It displays alarms and logs triggered by events.

Figure 6: The Notification Console

- Monitor Console: It displays the traffics for device health check purpose.

  - For each IP device except NTS switches, User can set a threshold of throughput for IP devices, and get notification when throughput is lower or higher than settings.

  - If both values are "0", it means the function is disabled.

  - Polling interval is 1 second, when the page is closed, the Polling interval will change to around 5 seconds.
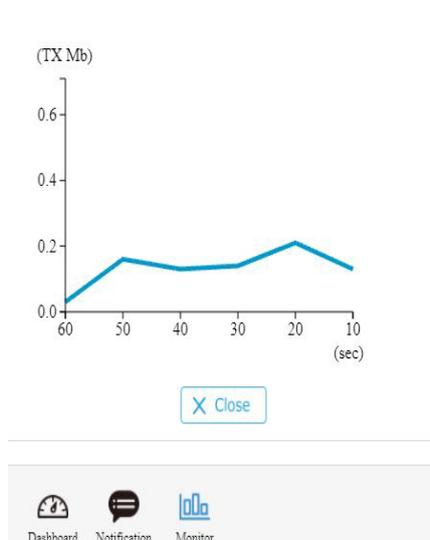
Figure 7: The Monitor Console

5. ⚙ In the upper right corner, there is a "Setting icon". When user clicks the icon, it will pop-up Device, Group, Config, export topology view and advanced search functions for the topology.

- Device Search Console

    All devices and info. It will show on the list.

	Function
A.	Filter devices by Device Type
B.	Search devices by key words or full text search
C.	Save the whole View to SVG, PNG or PDF

Figure 8: The Device Search Console

Floor View

User can easily plan IP devices installation location onto the custom uploaded floor images.
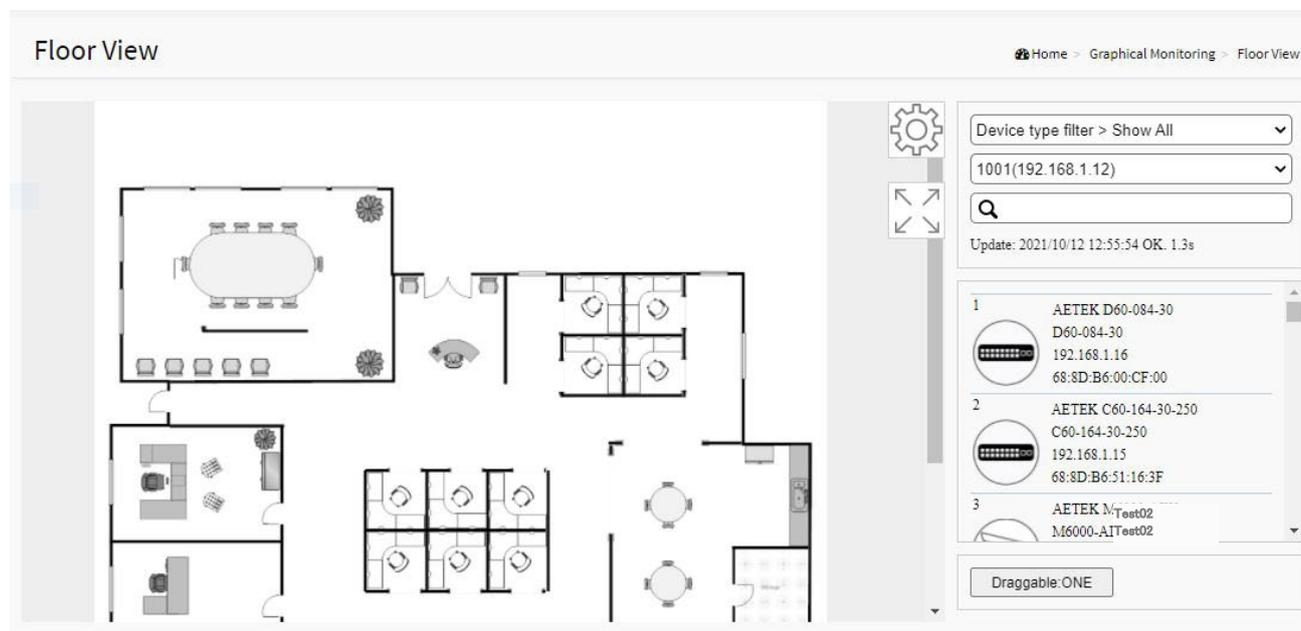
Figure 9: The Floor View

- Anchor Devices onto Floor Maps

- Find Device Location Instantly

- 10 Maps can be Stored in Each Switch

- Other Feature same as Topology View

- To place and remove a device icon:

  - To select a device and click its icon from the device list.

  - The device icon will show on the floor image's default location.

  - To click and hold left mouse by dragging-and-dropping the icon to the correct location on the floor view.

  - To click cross sign on the right side of device icon to remove a device from all floor view images.
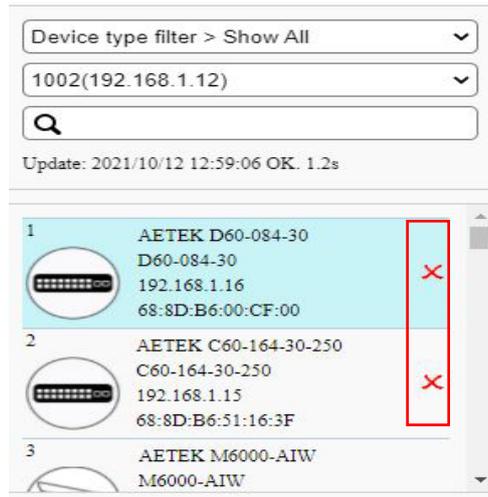
Figure 10: The Device Icon to Remove a Device

- If there are more than two floor images, it can be selected from the field.
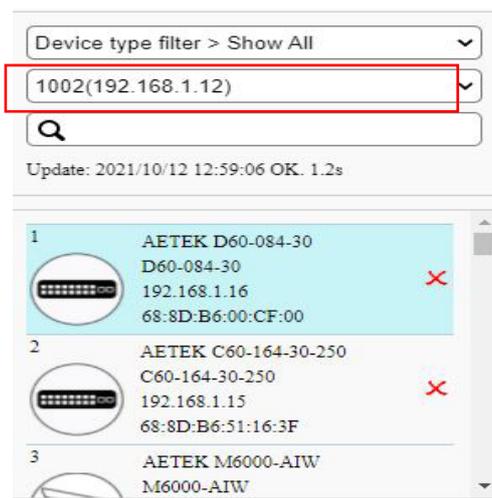
Figure 11: The Device Icon to Select floor

Map View

It can help to find the location of the devices even they are installed in different building. User can place the device icon on the Map View of which navigated by Google map.
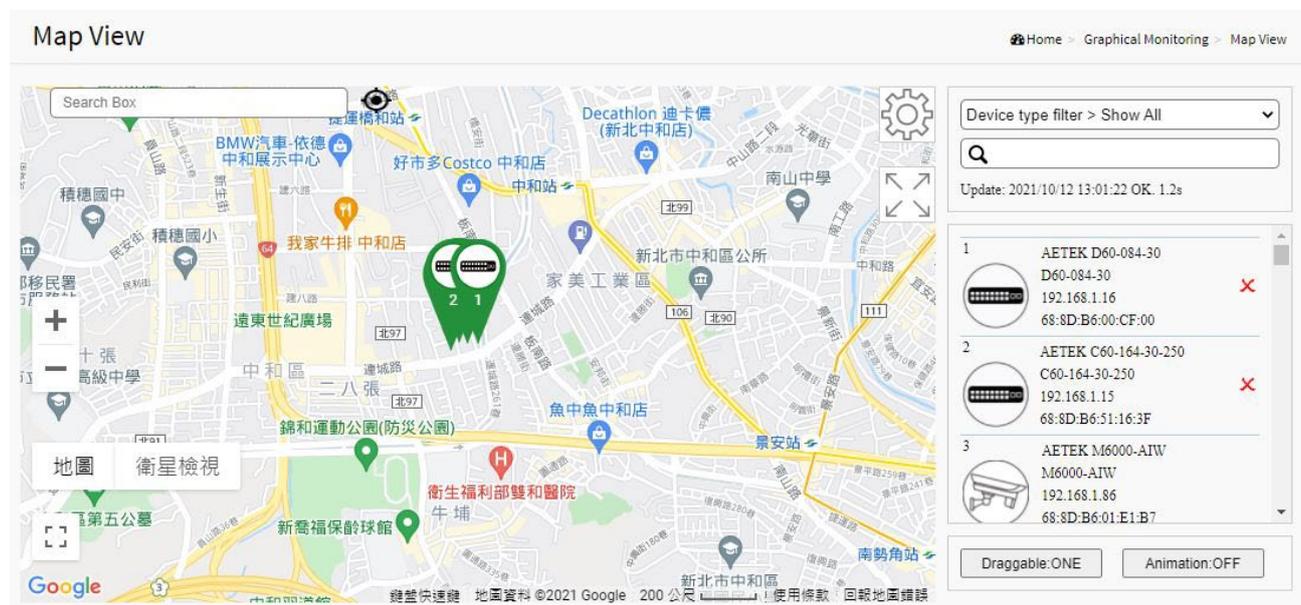
Figure 12: The Map View

- Anchor Devices onto Google Map.

- Find Devices Instantly from Map.

- On-Line Search Company/Address.

- Outdoor IP Cam/WiFi Applications.

- Other Feature same as Topology View.

NTS Mode

This page can let user decide whether NTS mode is enabled or disabled.
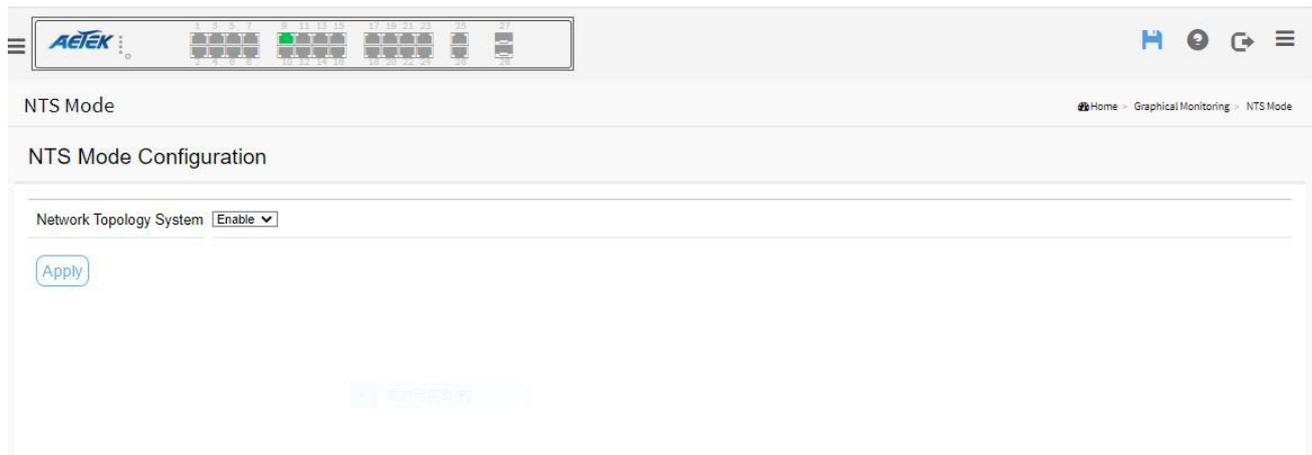
Figure 13: The NTS Mode Configuration

● Enable: Let this switch to NTS network

● Disable: Exit this switch from NTS network

Management

Device List

It will show all devices and information which are detected by NTS.
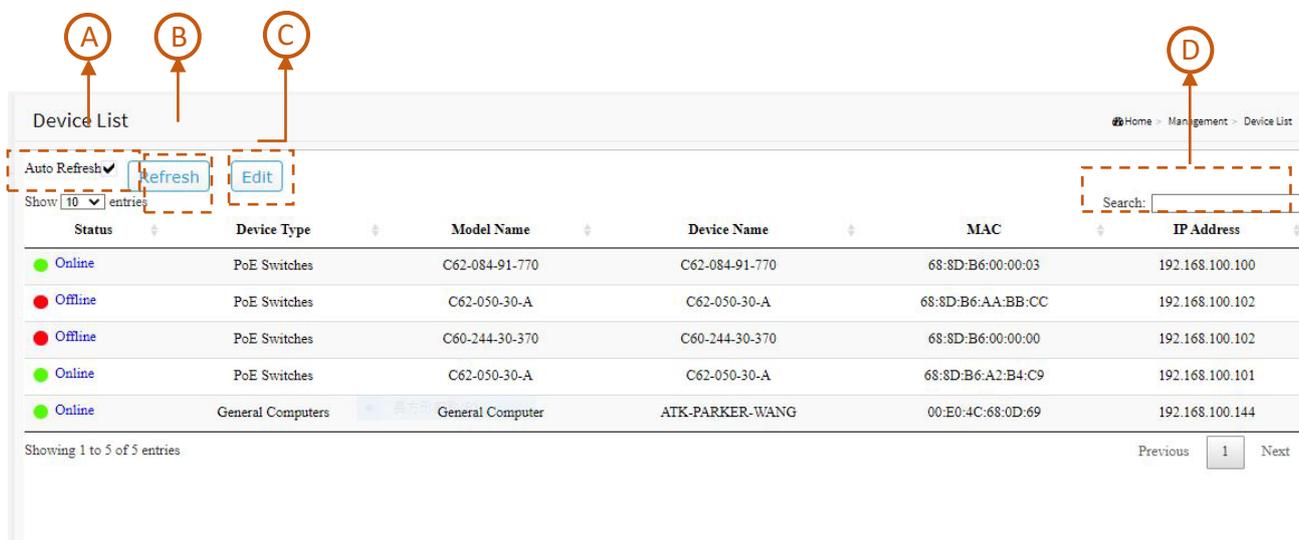
Figure 14: The Devices List

A. ![Auto-refresh off] If you want to auto-refresh the information then you need to evoke the "Auto refresh".

B. ![Refresh] Click this icon to Refresh the status of all devices.

C. ![Edit] Click this icon to Edit Device Name and http Port.

- User can press "Edit" icon to edit device name for each IP device. This function can also be configured in the Dashboard of Topology view.

- There is no HTTP connection function for Unknown Device and PC type devices, so UI doesn't provide "Edit HTTP port" function for configuring it.

Figure 15: The Edit of Devices List

D. [Search:] Search devices by key words with full text search.

Note:

The device name will not save until you click Apply button. Please do not click refresh, auto-refresh or edit button before you apply new device name.

Map API Key

Users will need a valid API key and a Google Cloud Platform billing account to access and enable Google Map.

Please visit the Google website below and following the directions to get API key:

https://developers.google.com/maps/documentation/directions/get-api-key

Figure 16: The Map API Key Page

Event Mail

Users can receive all NTS event mails via finishing these SMTP settings.

Figure 17: The Event Mail Page

Maintenance

Floor Image

In this page, user can add or delete floor image files.

Figure 18: The Floor Image

- Each NTS switch provides 10 files space for uploading.

- Only support JPG and PNG formats.

- File size is limited to 256KB.

- All NTS switches' floor image in the same network can be shared together.

    - For example:

      If Switch1 has uploaded 10 floor images, Switch2 uploaded 5 images, the total 15 floor images can be shared and selected on all NTS switches in the same network.

- File name will attach IP address to let user know the floor image is stored on which NTS switch.

Traffic Monitor

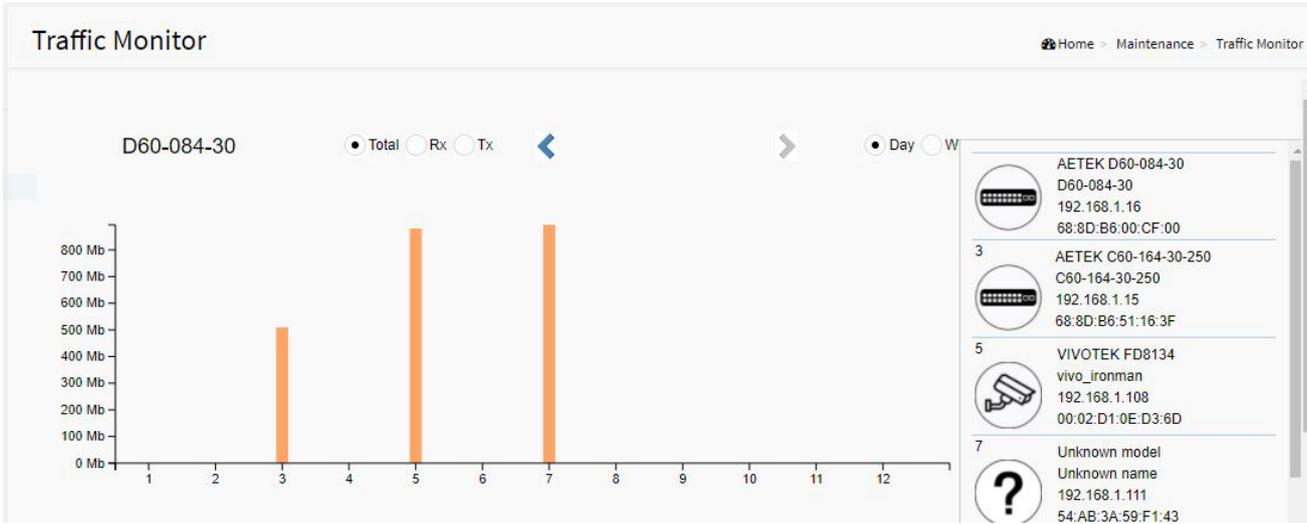In this page, user can see traffic results on each connected devices.

Figure 19: The Traffic Image
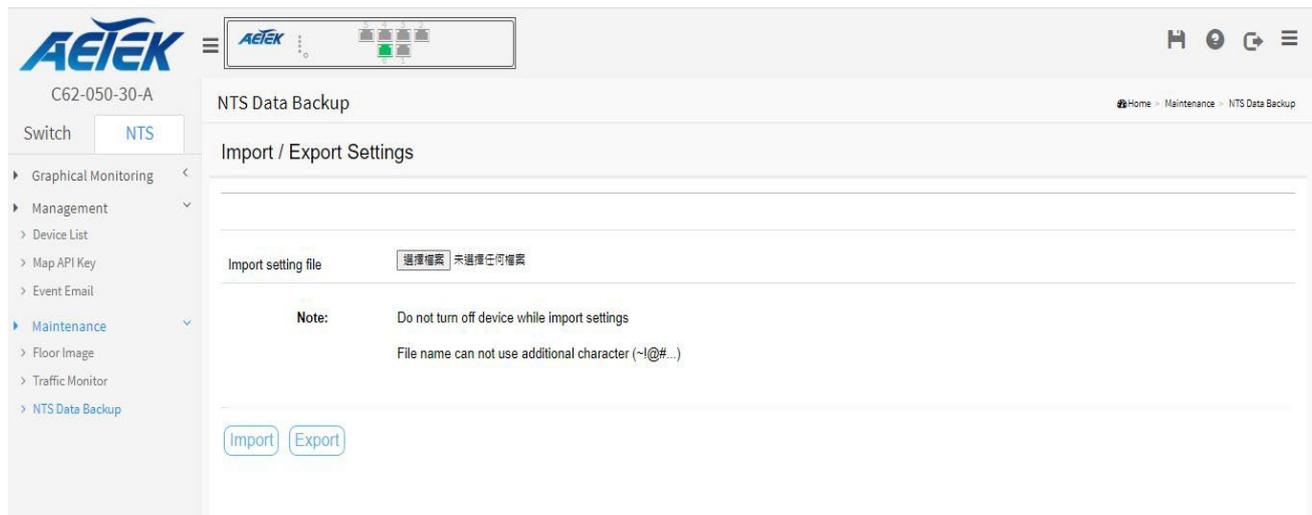
NTS Data Backup

In this page, user can select to import or export NTS setting files.

Figure 20: The Traffic Image