Configuration Guide for DPI, IPS/IDS, and Wireless IPS/IDS

This guide will introduce how to use the DPI, IPS/IDS, and wireless IPS/IDS functions of the Omada Controller.

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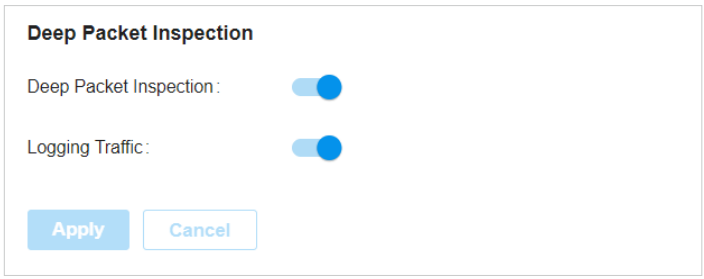
1. DPI

Overview

DPI (Deep Packet Inspection) helps you identify, analyze, and control the traffic at the application layer in the network. DPI engine includes the latest application identification signatures to track which applications are using the most bandwidth. You can better manage and distribute network traffic usage through DPI.

Configuration

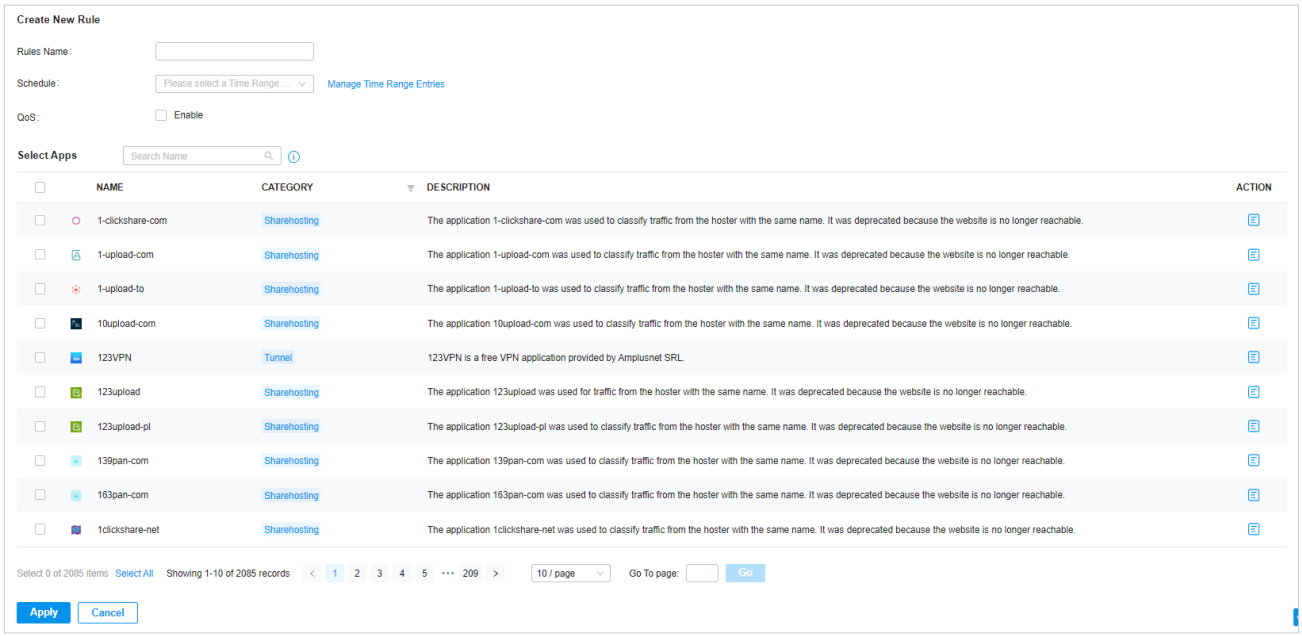
1. Select a site from the drop-down list of Organization. Go to Settings > Network Security > Application Control.
2. On the Deep Packet Inspection page, enable Deep Packet Inspection and Logging Traffic, then apply the settings.



Deep Packet Inspection	When enabled, the device will send the forwarded traffic to a professional local DPI engine for analysis, so as to judge and identify the type of traffic.
Logging Traffic	When enabled, the device will collect and save the results of traffic analysis. You can check the results on the Statistics > Application Analytics page.

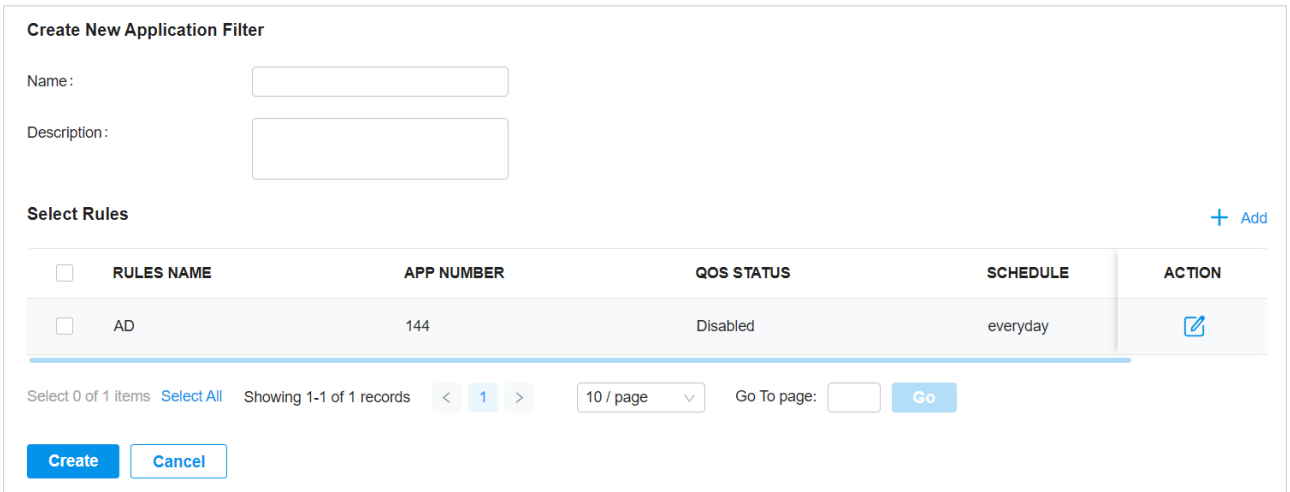
3. Apply the settings.

4. On the Rules Management page, click Create New Rule. You can predefine one or more rules, and APP control strategy that can be referenced, and realize block or QoS actions for specified Apps within a specified time period.



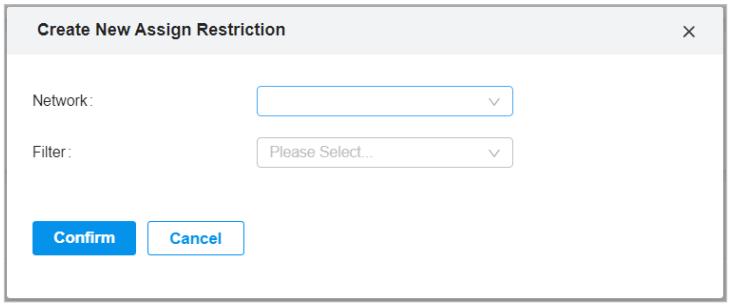
Rule Name	Specify the name of the rule.
Schedule	Specify the time period when the rule takes effect. You can create new time range according to your needs.
QoS	Enable this option and select QoS Class to configure the QoS strategy if needed.
Select Apps	Select the Apps for the rule.

5. On the Application Filter page, click Create New Application Filter. You can apply the defined rules and divide multiple rules into one filter set for easy management.



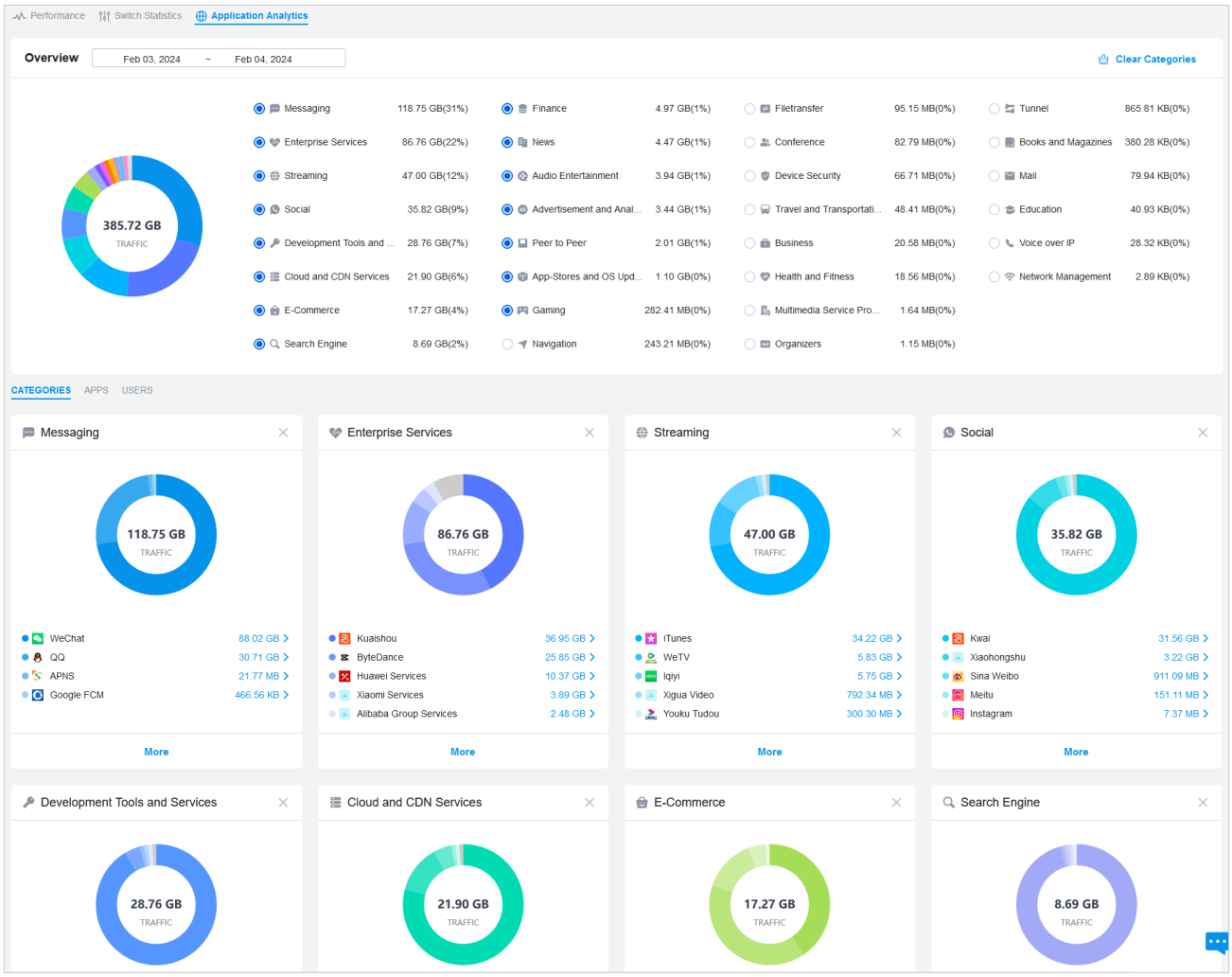
Name	Specify the name of the filter.
Description	Enter a description for identification.
Select Rules	Select the rules for the filter.

6. On the DPI Packet Inspection page, click Create New Assign Restriction. Select a network to apply a pre-defined filter.



Network	Select a network to apply the filter.
Filter	Select a pre-defined filter.

7. Save the settings. You can view the results of traffic analysis on the Statistics > Application Analytics page.



If you want to clear DPI data of a time period, go to the Deep Packet Inspection page, click the Clear Data button and specify the period.

2. IDS/IPS

Overview

IDS/IPS is a security mechanism that detects intrusions based on attack characteristics. It can detect malware, Trojan horses, worms, ActiveX and other attacks to protect the network security of users.

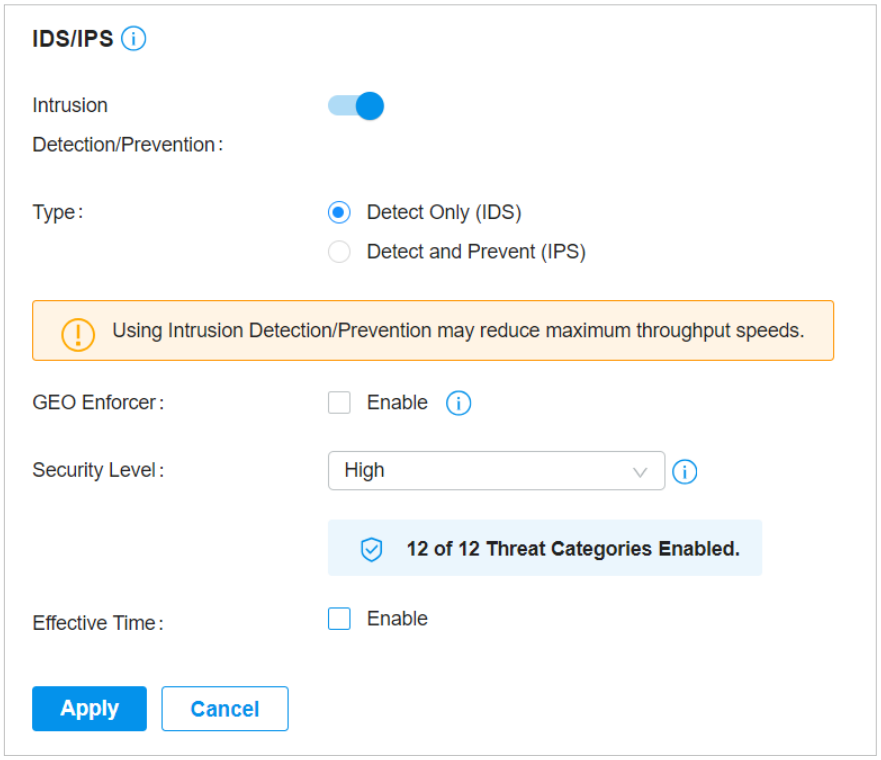
Note:

Using Intrusion Detection/Prevention may reduce maximum throughput speeds.

2. 1 Configure IDS/IPS

1. Select a site from the drop-down list of Organization. Go to Settings > Network Security > IDS/IPS.

2. Enable Intrusion Detection/Prevention and configure the parameters.



Type	Specify the working mode. In IDS mode, the system will only report the threat log. In IPS mode, the system will block the corresponding connection for 300s after a threat is detected.
GEO Enforcer	Enable geographic location identification of threat logs.
Security Level	Choose the protection level. A higher protection level means more threat types are detected, while a lower protection level only detects some important threats. You can also customize the protection level.
Effective Time	Specify the effective time period of the IDS/IPS module.

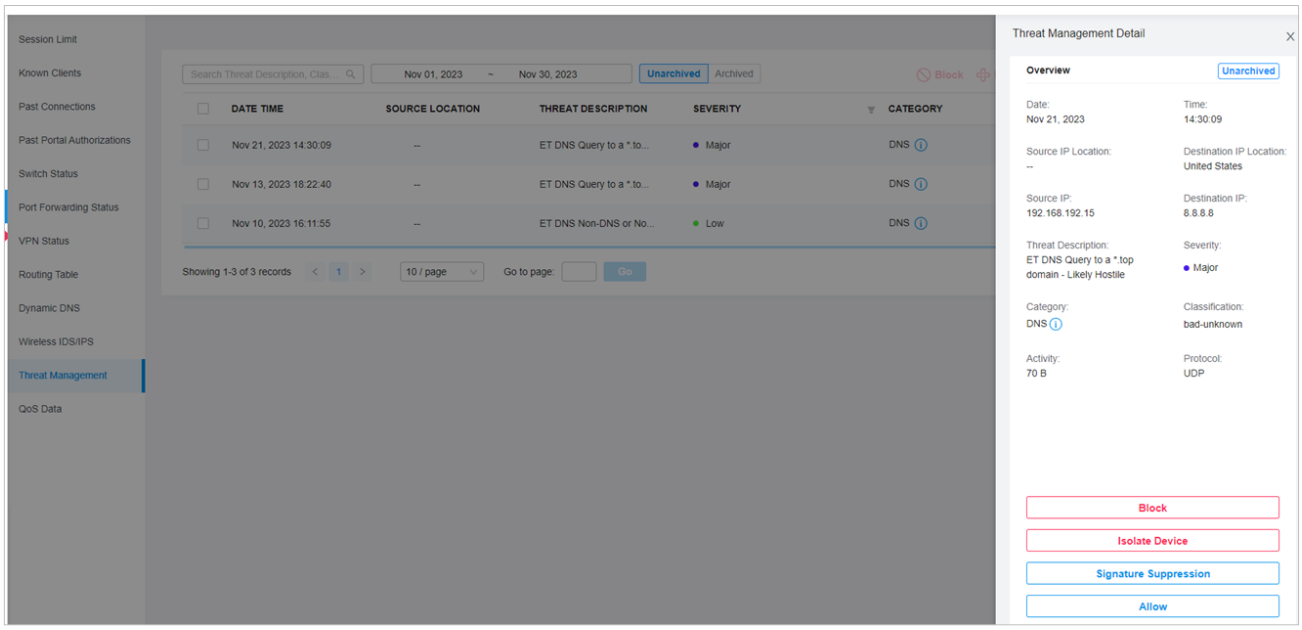
3. Apply the settings.

   When the system discovers a threat, the corresponding threat log will be displayed on the Insights > Threat Management page.

2. 2 Manage Threats in a Site

1. Select a site from the drop-down list of Organization. Go to Insights > Threat Management.

2. Click a threat that the system discovered, then you can choose a specified response strategy for the corresponding attack IP: Block, Isolate Device, Signature Suppression, or Allow.



Block	Drop traffic to/from the external IP address and the specific internal IP address. If you block an entry, it will be added to the Block List at Settings > Network Security > IDS/IPS.
Isolate Device	Drop traffic to/from the external IP address and any internal IP address.
Signature Suppression	Mute the alerting on certain signatures. This will also disable blocking on traffic matching the designated suppression rule. If you suppress the signature of an entry, it will be added to the Signature Suppression list at Settings > Network Security > IDS/IPS.
Allow	Trust the IP address so that the traffic, depending on the direction selected, will not get blocked to or from the identified IP address. If you allow an entry, it will be added to the Allow List at Settings > Network Security > IDS/IPS.

3. You can further check and edit processed entries at Settings > Network Security > IDS/IPS.

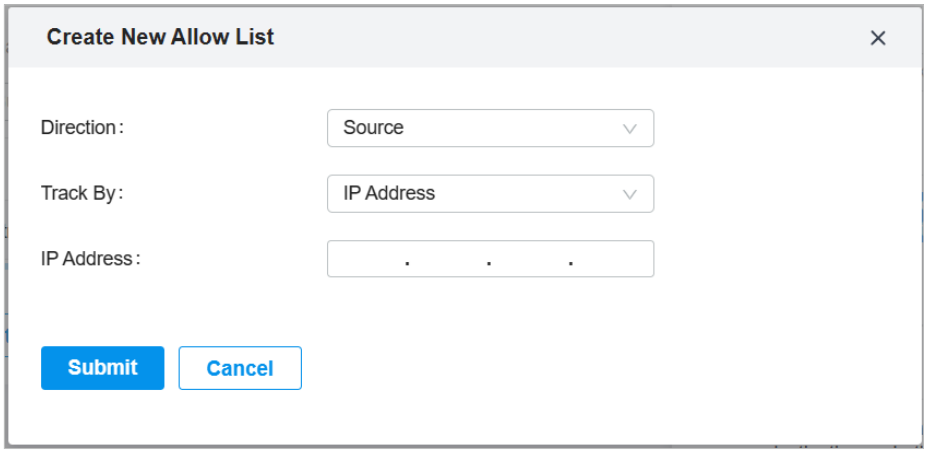
- **Block List**

  The Block List page displays all block entries added through the Threat Management page. You can choose to block all traffic of the source IP in the threat log, or block all traffic between the source IP and the destination IP in the threat log.

- **Allow List**

  On the Allow List page, you can add, view, and edit the exemption entries of IDS/IPS detection, so that the specified objects will no longer trigger threat logs.

Click Create New Allow List and configure the parameters.



Direction	Specify the location of the object (target) exempt from triggering the threat: source, destination, or both directions.
Track By	Specify the type of object (target) exempt from triggering the threat: IP address, Network, or Subnet.
IP Address/Network/ Subnet	Specify the value of the object.

- **Signature Suppression**

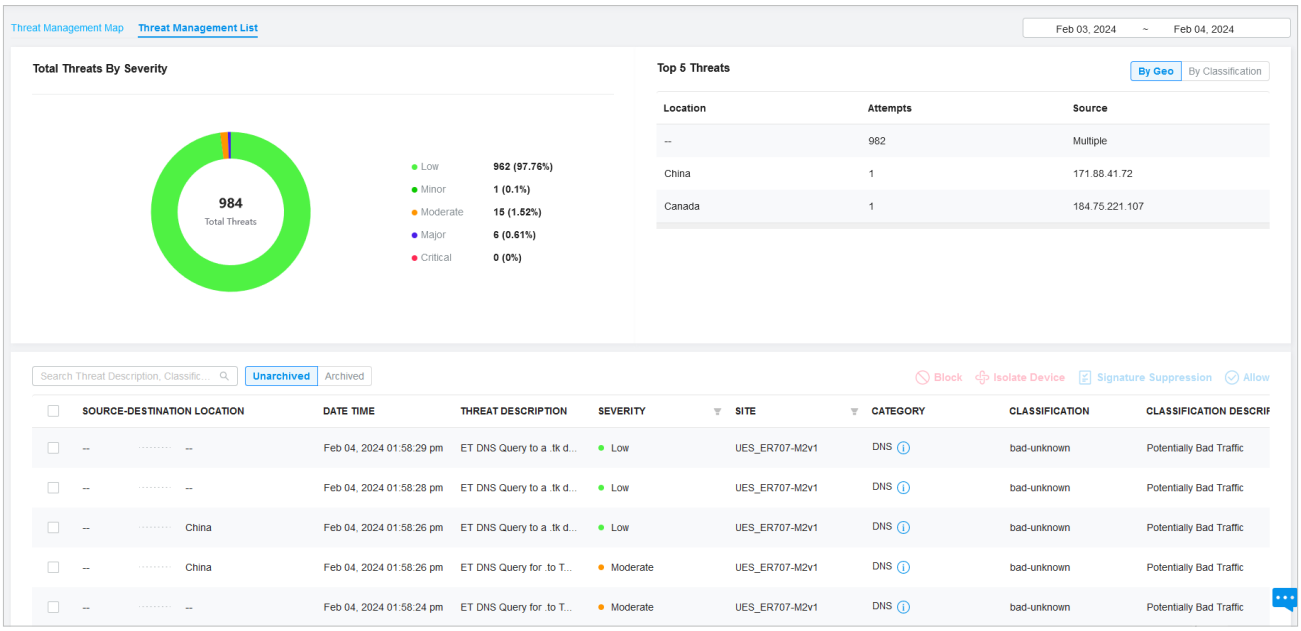
  The Signature Suppression page displays all the signature suppression entries added through the Threat Management page, and the objects with signature suppressed will no longer trigger specific threat logs.

2. 3 Manage Threats Globally

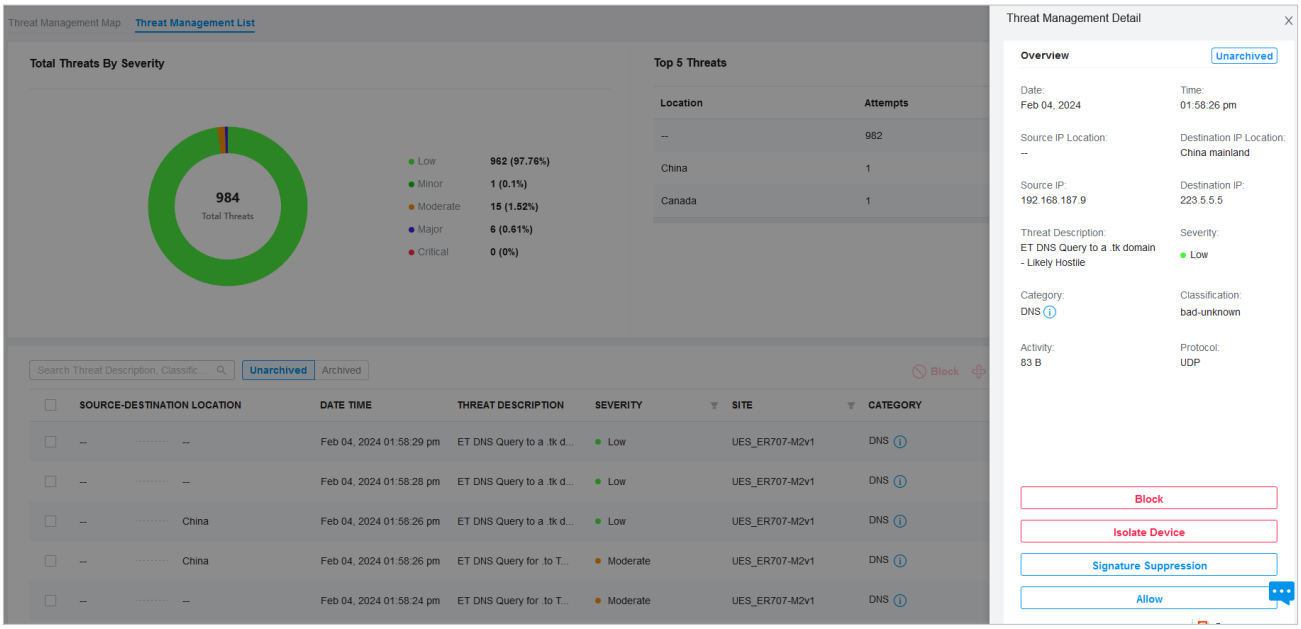
In Global view, go to Security.

■ Threat Management List

In the Threat Management List, you can check top threats by severity, locations of top threats, and unarchived and archived threats.



In the unarchived threat list, click an entry, then you can choose a specified response strategy for the corresponding attack IP: Block, Isolate Device, Signature Suppression, or Allow.



Block	Drop traffic to/from the external IP address and the specific internal IP address. If you block an entry, it will be added to the Block List at Settings > Network Security > IDS/IPS.
Isolate Device	Drop traffic to/from the external IP address and any internal IP address.

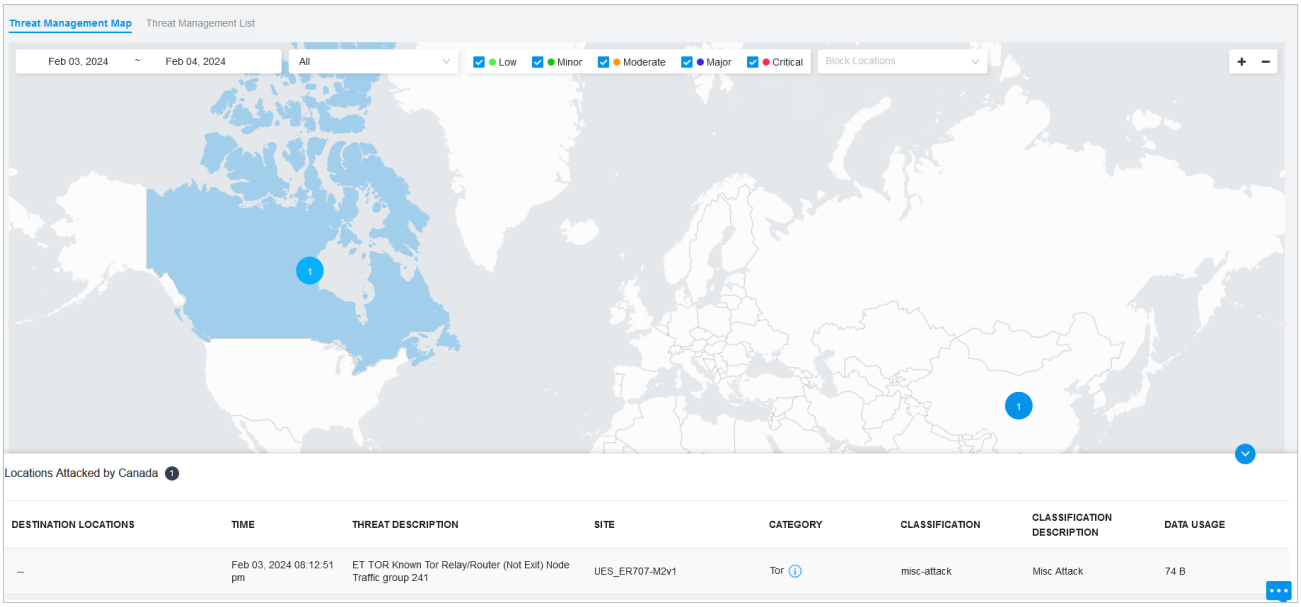
Signature Suppression	Mute the alerting on certain signatures. This will also disable blocking on traffic matching the designated suppression rule. If you suppress the signature of an entry, it will be added to the Signature Suppression list at Settings > Network Security > IDS/IPS.
Allow	Trust the IP address so that the traffic, depending on the direction selected, will not get blocked to or from the identified IP address. If you allow an entry, it will be added to the Allow List at Settings > Network Security > IDS/IPS.

■ Threat Management Map

In the Threat Management Map, you can view the threat sources and numbers of attacks that the system has discovered. You can click a number in the map to view attack details.

You can right-click a location to block its attack events and manage the Block Locations list.

If excessive attacks have been detected, you can choose specific severity levels to display.



3. Wireless IDS/IPS

Overview

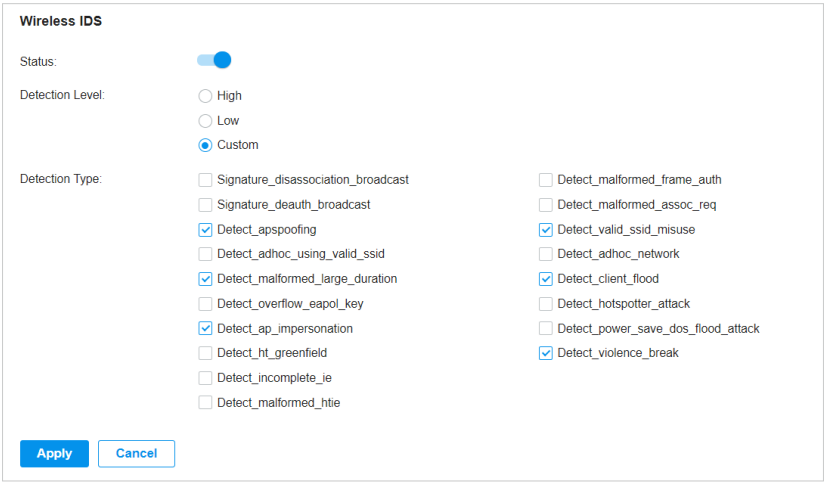
With Wireless IDS (Intrusion Detection System), APs will regularly detect wireless signals of the devices in the network to check for malicious or illegal network behaviors.

With Wireless IPS (Intrusion Prevention System), APs can take corresponding preventions and countermeasures against detected malicious devices and attackers.

■ Wireless IDS

1. Select a site from the drop-down list of Organization. Go to Settings > Network Security > Wireless IDS/IPS.

2. On the Wireless IDS page, enable the function and configure the detection settings.

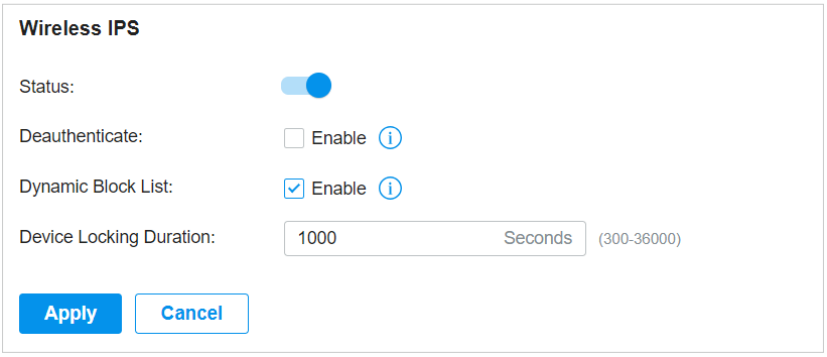


3. Save the settings. When the device discovers a threat, the corresponding threat log will be displayed on the Insights > Threat Management page.

■ Wireless IPS

1. Select a site from the drop-down list of Organization. Go to Settings > Network Security > Wireless IDS/IPS.

2. On the Wireless IPS page, enable the function and configure the parameters.



Deauthenticate	When enabled, Omada APs will counteract the detected malicious APs, so that clients will disconnect from those APs. To use this function, make sure you have enabled detection of events **Detect_adhoc_using_valid_ssid** and **Detect_valid_ssid_misuse**. Otherwise the configuration will not take effect.
Dynamic Block List	When enabled, once an AP detects a malicious attack such as brute force cracking, it will add the attacker to the block list and will not deal with packets from this attacker for a period of time. To use this function, make sure you have enabled detection of events **Detect_client_flood**, **Detect_violence_break**, and **Detect_power_save_dos_flood_attack**. Otherwise the configuration will not take effect.
Device Locking Duration	Specify the duration for the attacker to stay in the dynamic block list after being added.

3. Save the settings. When the device discovers a threat, it will take corresponding preventions and countermeasures against detected malicious devices and attackers.