Cambium Networks™

# USER GUIDE

## NSE 3000

System Release 1.1

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January 2023

# Contents

# About This Guide

This document explains how to configure the NSE 3000 products. It is intended for use by the system designer, system installer, and system administrator.

## Purpose

Documents specific to the NSE 3000 products are intended to instruct and assist personnel in the operation, installation, and maintenance of the NSE 3000 device (Cambium Networks) and ancillary devices of NSE 3000 products. It is recommended that all personnel engaged in such activities must be properly trained.

Cambium Networks disclaims all liability, whatsoever, implied or express - for any risk of damage, loss or reduction in system performance arising directly or indirectly out of the failure of the customer, or anyone acting on the customer's behalf - to abide by the instructions, system parameters, or recommendations made in this document.

## Cross references

References to external publications are shown in italics. Other cross references, emphasized in blue text in electronic versions, are active links to the references.

This document is divided into topics that are divided into sections. Sections are not numbered and are listed in the table of contents.

## Feedback

We appreciate feedback from the users of our documents. This includes feedback on the structure, content, accuracy, or completeness of our documents. To provide feedback, visit our support website - https://support.cambiumnetworks.com.

# Warnings, cautions, and notes

The following sections describe how warnings, notes, and cautions are used in this document and in all documents of Cambium Networks:

## Warnings

Warnings precede instructions that contain potentially hazardous situations. Warnings are used to alert the reader to possible hazards that could cause loss of life or physical injury. A warning has the following format:

**Warning**

Warning text and consequence for not following the instructions in the warning.

## Cautions

Cautions precede instructions and are used when there is a possibility of damage to systems, software, or individual items of equipment within a system. However, this damage presents no danger to personnel. A caution has the following format:

**Caution**

Caution text and consequence for not following the instructions in the caution.

## Notes

A note means that there is a possibility of an undesirable situation or provides additional information to help the reader understand a topic or concept. A note has the following format:

**Note**

Note text.

# Problems and warranty

## Reporting problems

If any problems are encountered when installing or operating this equipment, follow this procedure to investigate and report:

1. Search this document and the software release notes of supported releases.
2. Visit the support website (Cambium Networks).
3. Ask for assistance from the Cambium Networks product supplier.
4. Gather information from affected units, such as any available diagnostic downloads.
5. Escalate the problem by emailing or telephoning support.

## Repair and service

If unit failure is suspected, obtain details of the Return Material Authorization (RMA) process from the support website.

## Hardware warranty

Cambium's standard hardware warranty is for one (1) year from the date of shipment from Cambium Networks or a Cambium distributor. Cambium Networks warrants that hardware will conform to the relevant published specifications and will be free from material defects in material and workmanship under normal use and service. Cambium shall within this time, at its own option, either repair or replace the defective product within thirty (30) days of receipt of the defective product. Repaired or replaced products will be subject to the original warranty period but not less than thirty (30) days.

**Caution**

Using non-Cambium parts for repair could damage the equipment or void warranty. Contact Cambium for service and repair instructions.

Portions of Cambium equipment may be damaged from exposure to electrostatic discharge. Use precautions to prevent damage.

# Security advice

Cambium Networks systems and equipment provide security parameters that can be configured by the operator based on their particular operating environment. Cambium Networks recommends setting and using these parameters following industry recognized security practices. Security aspects to be considered are protecting the confidentiality, integrity, and availability of information and assets. Assets

include the ability to communicate, information about the nature of the communications, and information about the parties involved.

In certain instances Cambium Networks makes specific recommendations regarding security practices, however the implementation of these recommendations and final responsibility for the security of the system lies with the operator of the system.

# Caring for the environment

The following information describes national or regional requirements for the disposal of Cambium Networks supplied equipment and for the approved disposal of surplus packaging.

## In EU countries

The following information is provided to enable regulatory compliance with the European Union (EU) directives identified and any amendments made to these directives when using Cambium Networks equipment in EU countries.

#### Disposal of Cambium equipment

European Union (EU) Directive 2012/19/EU Waste Electrical and Electronic Equipment (WEEE).

Do not dispose the Cambium Networks equipment at landfill sites. For disposal instructions, refer to https://www.cambiumnetworks.com/support/compliance/.

#### Disposal of surplus packaging

Do not dispose the surplus packaging in landfill sites. In the EU, it is the individual recipient's responsibility to ensure that packaging materials are collected and recycled according to the requirements of EU environmental law.

## In non-EU countries

In non-EU countries, dispose of Cambium equipment and all surplus packaging in accordance with national and regional regulations.

# Basic information about the products

This section provides basic information about the NSE 3000 products and prerequisite tasks. This information helps you to set up the system before proceeding with the configuration of NSE 3000.

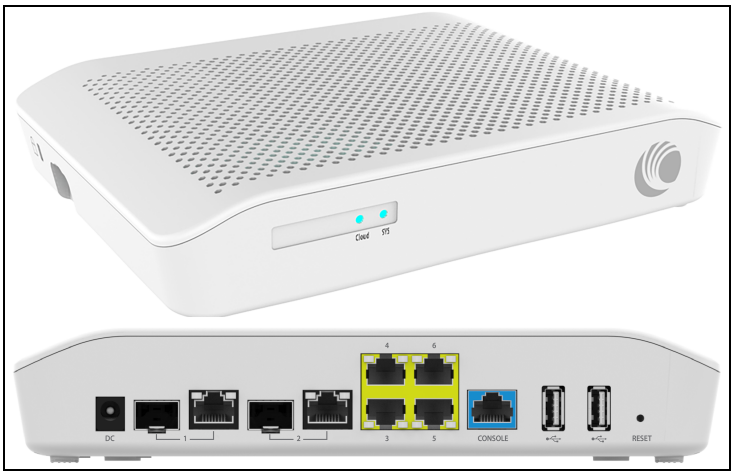
This section covers the following topics:

- Hardware information
- Safety precautions
- Regulatory compliance
- Prerequisite tasks

The Network Service Edge (NSE) product delivers advanced security, routing, and SD-WAN policies for small and medium enterprises.

NSE 3000 is the first product offering in the NSE series. It has two WAN ports and four LAN ports, and supports reliable connectivity with WAN throughputs of up to 1 Gbps. It also supports an industry-leading IDS/IPS engine, advanced application, geo-IP firewalls, network security scanners, anti-malware protection, SD-WAN, and cutting-edge application visibility and control.

Figure 1: *NSE 3000 device*




## Hardware information

Table 1 NSE 3000 includes the following hardware platforms:

Table 1: Hardware information

| Hardware specification | Hardware platform |
|---|---|
| WAN Ports | 2 x 1 Gbps RJ45/SFP |
| LAN Ports | 4 x 1 Gbps RJ45 |
| Dimensions | 175.16 mm x 232.72 mm x 43 mm |

| Hardware specification | Hardware platform |
|---|---|
| Weight | 0.65 kg |
| Max Power consumption | 22.8W |
| Power Supply | 40W DC |
| Operating temperature | 0ºC–40ºC |
| Operating humidity | 10%–90% |

# Prerequisite tasks

Before performing the configuration tasks, ensure that you have met the following hardware requirements (for example):

- A personal computer (PC) or laptop if you want to connect directly to the NSE 3000 device web UI.
- NSE 3000 device with IP address configured.

To put the whole system together, you must perform the following prerequisite tasks:

1. Install rubber feet
2. Power supply
3. LED status

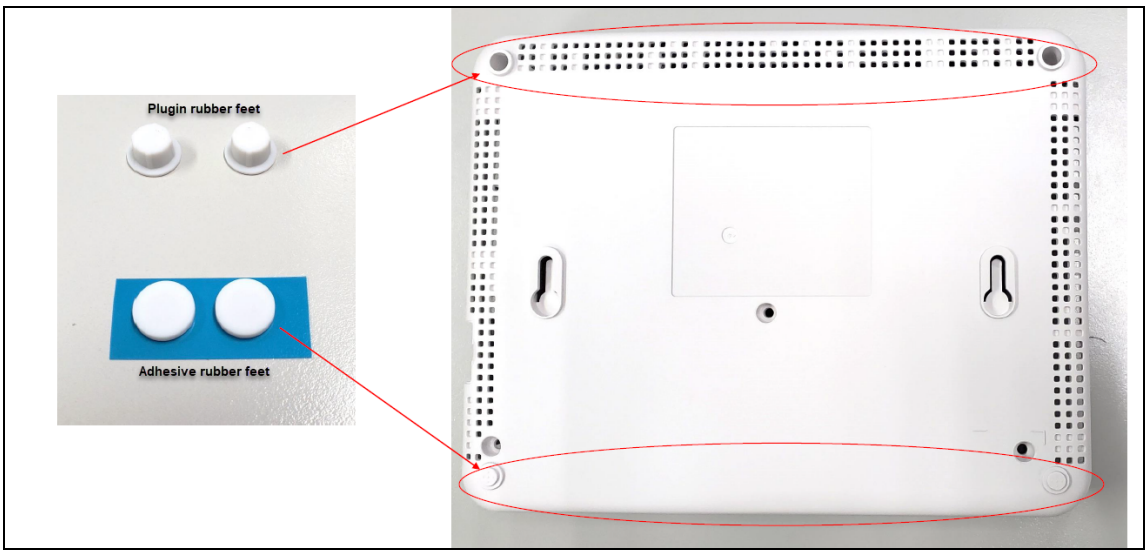
These prerequisite tasks help you to ensure that each component of the system is working before the final integration.

# Install rubber feet

This section describes how to install rubber feet on rubber slots of the NSE 3000 device. Following two types of rubber feet are used for installation:

- Plugin type
- Adhesive type

Figure 2: *Types of rubber feet*




To install the rubber feet, perform the following steps:

## Plugin type

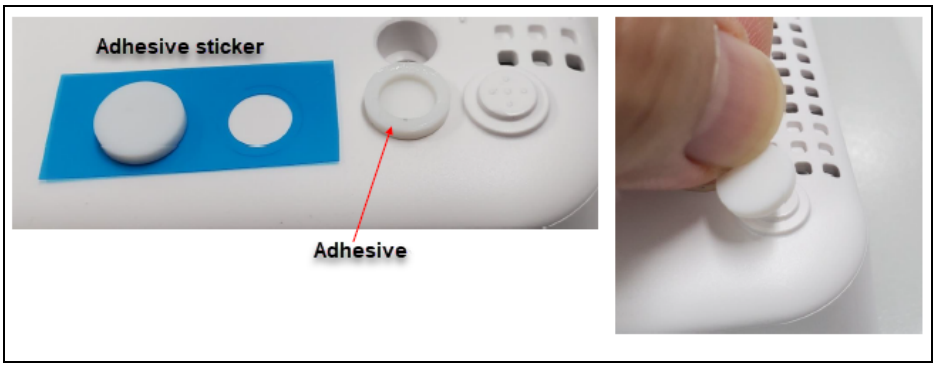
1. Place the plugin rubber feet on the rubber slots.
2. Press the plugin rubber feet as shown in Figure 3.

   Figure 3: *Placing the Plugin rubber feet type*

## Adhesive type

1. Peel the adhesive rubber feet from the sticker.
2. Place the adhesive rubber feet on the rubber slots.
3. Press the adhesive rubber feet as shown in Figure 4.

Figure 4: *Placing the adhesive rubber feet type*




## Power supply

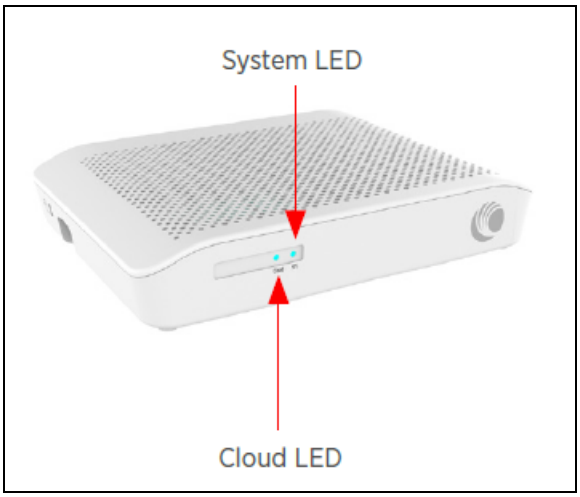
Connect the AC power cords of the power supply to a power inlet and connect the DC plug to the DC jack of the NSE 3000 device.

## LED status

LED status of the device displays as shown below:

- When NSE 3000 is booting up, the system LED is amber in color.
- When NSE 3000 is fully up and running, the system LED is green in color.

Figure 5: *NSE 3000 LED*



# Managing NSE 3000 using cnMaestro

NSE 3000 is completely managed by the easy-to-use, secure, and cloud-hosted Cambium Networks cnMaestro Management system. A single-pane-of-glass management to operate and manage all Cambium Networks enterprise products NSE 3000 devices, Enterprise Wi-Fi, and cnMatrix switches.

To manage the NSE 3000 device through cnMaestro, refer to cnMaestro Cloud User Guide.

# Advanced onboarding setup

If the device has trouble in connecting to the internet or cnMaestro, you can onboard the device through device UI. For more information, refer to Logging into the UI.

This section covers the following:

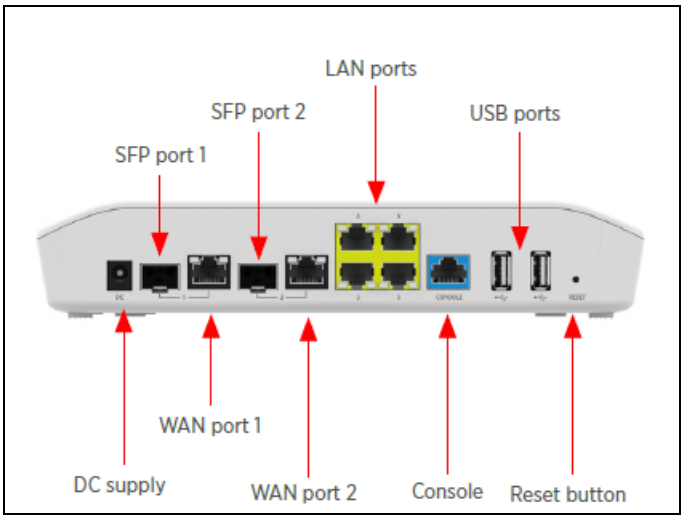
- Configure the management PC
- Logging into the UI
- NSE 3000 Dashboard
- WAN Configuration
- Operation
- Troubleshoot

## Configure the management PC

To configure the management PC perform the following steps:

1. Ensure that the Ethernet port on the management PC is configured to use DHCP.
2. Connect the Ethernet port on the management PC to any of the LAN ports.
3. Verify that the management PC obtains an IP address in the 192.168.200.0/24 subnet. Use the ipconfig or ifconfig command to verify the IP address.

Figure 6: *Device Port*




## Logging into the UI

To access the NSE 3000 using the web UI, perform the following steps:

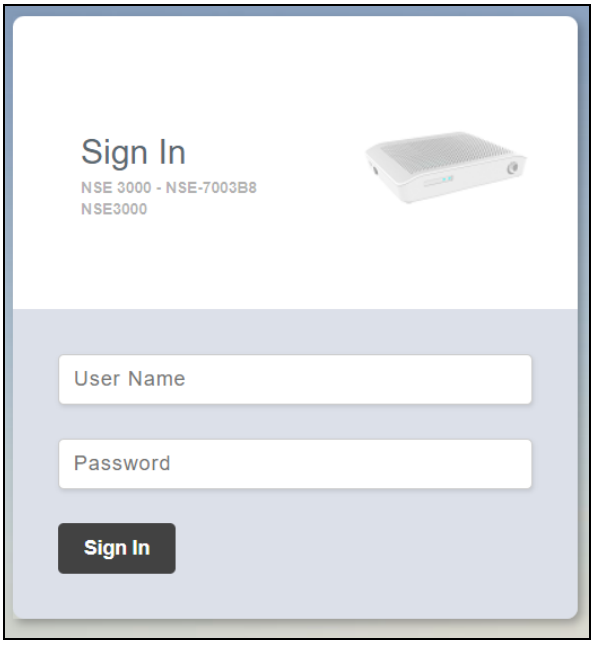
**Note**

New user needs to onboard the NSE 3000 device to cnMaestro, refer to cnMaestro Cloud User Guide.

1. Use the default IP address (http://192.168.200.1) to connect to the NSE 3000 setup.
2. Ensure that your PC is set up to communicate with the required range of IP addresses.
3. Open a web browser and type the URL - http://192.168.200.1 - to access the NSE 3000 UI.

   The **Sign In** page appears, as shown in Figure 7.

   Figure 7: *Sign In*




4. Type an appropriate username and password.

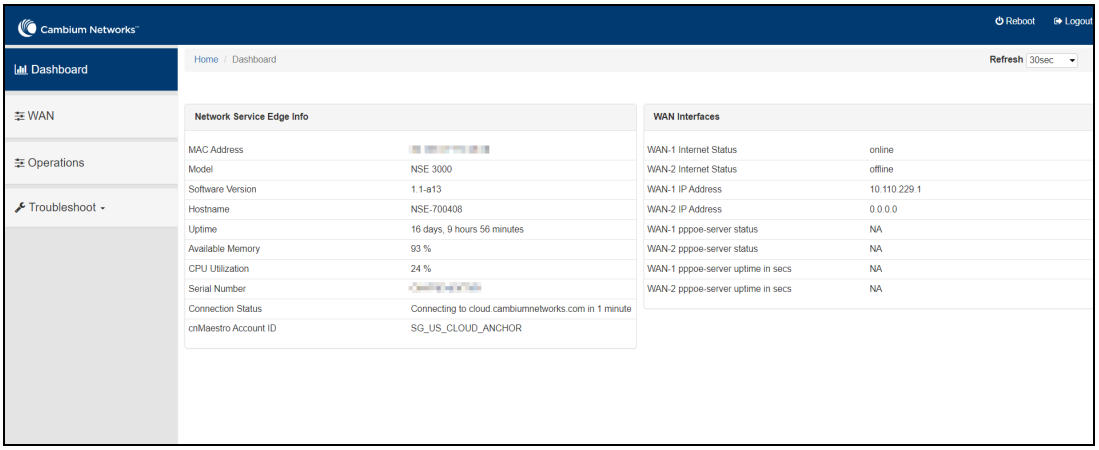
   Default username: admin

   Default password: admin

5. Click **Sign In**.

   The NSE 3000 dashboard page appears, as shown in Figure 8.

Figure 8: *The NSE 3000 Dashboard*




For more information about the NSE 3000 dashboard page, refer to the Viewing the dashboard.

# NSE 3000 Dashboard

This section provides information about UI controls and the main NSE 3000 dashboard page.

This section covers the following topics:

- UI Controls
- Viewing the dashboard

## UI Controls

Before configuring the UI of NSE 3000, familiarize yourself with the UI controls (as described in Table 2). These UI controls are required for adding, viewing, and managing NSE 3000 configurations.

Table 2: List of UI controls

| UI Control | UI Control name | Description |
|---|---|---|
| | Tools | To update firmware and reboot the unit. |
| | Copyright | To view the copyright information of the product. |
| Other common UI controls: | | |
| | Expand | To expand the parameters of a section. |
| | Collapse | To collapse the parameters of a section. |
| | Table | To view the parameters in a column format. |
| | Reboot | To reboot the system from the UI. |
| | Logout | To logout the system from the UI. |

## Viewing the dashboard

On logging into the NSE 3000 device UI, the main dashboard page, appears as shown in Figure 9. The below figure shows the elements that are displayed on the NSE 3000 Home page.

Figure 9: *The NSE 3000 Dashboard*

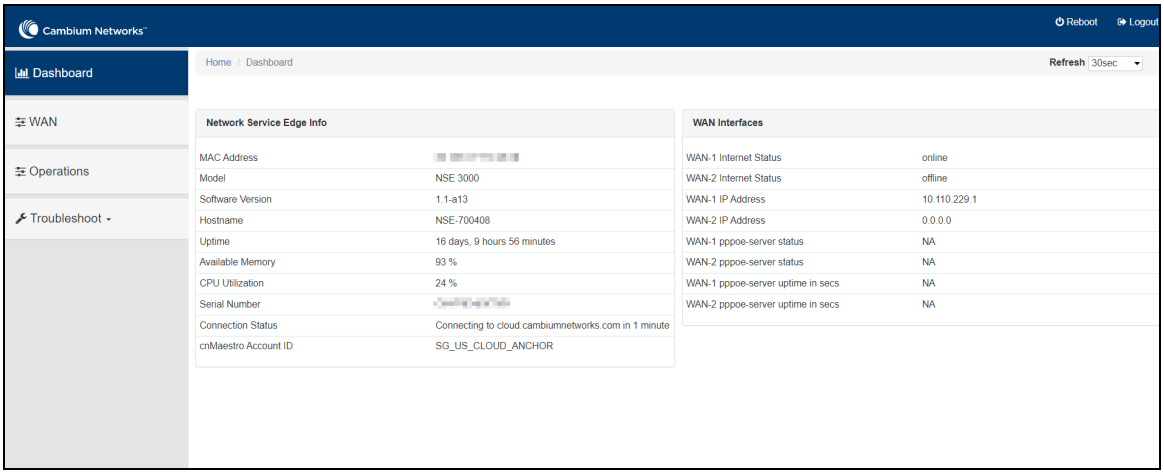



Table 3 provides the details of the parameters on the main dashboard.

Table 3: Dashboard parameters

| Parameters | Description |
|---|---|
| **Network Service Edge Info** | |
| MAC Address | Media Access Control (MAC) address. The hardware address that the factory assigns to the module for identification in the Data Link layer interface of the Open Systems Interconnection system. This address serves as an electronic serial number. |
| Model | Provides information related to the NSE 3000 model number and configured hostname. |
| Software Version | Provides the information about the software version used by the NSE 3000 device. |
| Hostname | The unique identifier that serves as name of your computer or server can be as long as 255 characters and consists of numbers and letters. |
| Uptime | Time period (in seconds) at which the last successful registration of the NSE 3000 device. |
| Available Memory | Provides the information about the available memory of CPU. |
| CPU Utilization | This field indicates the current CPU utilization of the device. |
| Serial Number | Serial number of the device that is used for device identification. |
| Connection Status | This field indicates the device connectivity. |

| Parameters | Description |
|---|---|
| cnMaestro Account ID | This field shows Account ID which is registered with Cambium Networks and it allows operator to manage devices using cnMaestro. |
| **WAN Interfaces** | |
| WAN-1 Internet Status | Indicates the WAN-1 Internet status. |
| WAN-2 Internet Status | Indicates the WAN-2 Internet status. |
| WAN-1 IP Address | WAN-1 IP address that is assigned to the network interface and used for the device management. |
| WAN-2 IP Address | WAN-2 IP address that is assigned to the network interface and used for the device management. |

### WAN

The **WAN** parameters, for each end-user requirements and type of wireless station in the WAN page. For more information about the **WAN** configuration, refer to the WAN Configuration section.

### Operation

The **Operation** page allows users to perform maintenance tasks of the NSE 3000 devices:

- **Firmware update**: To upgrade of the NSE 3000 devices.
- **System**: To provide different methods of debugging field issues and recovering devices.
- **Configuration**: To configure NSE 3000 device settings.

For more information about the parameters on the **Operation page**, refer to the Operation section.

### Troubleshoot

The **Troubleshoot** page provides users to debug and troubleshoot the system remotely. The Troubleshoot page contains multiple sections, as listed below:

- **Connectivity**: Provides different modes of network reachability for the NSE 3000 device.
- **Logs**: Supports the feasibility to check logs for different modules of NSE 3000 devices. These logs help the customer to debug an issue.

For more information about the parameters on the **Troubleshoot** page, refer to the Troubleshoot section.

## WAN Configuration

The **WAN** page allows the user to configure the device's IP address based on the IP mode.

To view and configure the WAN settings, perform the following steps:

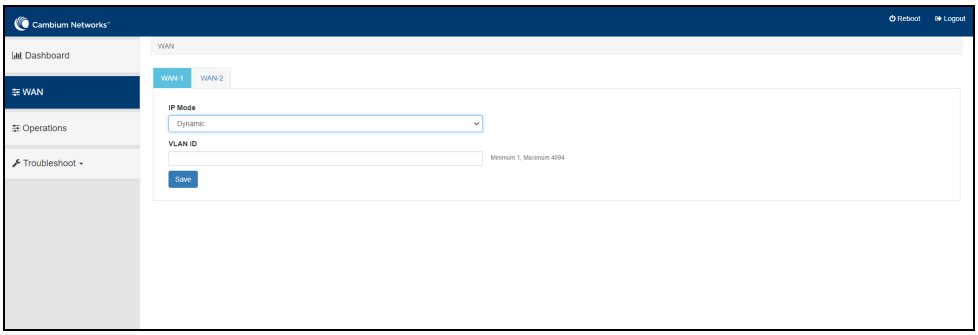
1. From the main NSE 3000 dashboard page, navigate to **WAN** page.

The **WAN** page appears, as shown in Figure 10.

**Note**

By default, WAN-1 page is displayed. You can configure WAN on WAN-1 or WAN-2.

Figure 10: *The WAN page*




2. Set the values for each parameter, as described in Table 4.

Table 4: WAN configuration parameters

| Parameters | Description |
|---|---|
| IP Mode | Determines the network that must be configured to use IPv4 addresses.<br>The following IP modes are supported:<br>• Dynamic<br>• Static<br>• PPPoE |
| VLAN ID | VLANs are identified by a VLAN ID (a number between 1 – 4094), VLAN configuration is optional. When configured 802.1q header is added to all transmitted frames and received frames are expected to include 802.1q header with the same VLAN ID. |
| Following parameters appear only when you select the mode as **Static** in the **IP Mode**, as shown in Figure 11. | |
| IP Address | Specify the 32-bit binary number that identifies a network element by both network and host. |
| Subnet Mask | Specify the subnet mask for the destination IP/network for this route. |
| Gateway | Specify the gateway for the destination IP/network for this route. |
| **DNS** | |
| Primary DNS | Configure the IP address of primary upstream DNS server on this Interface. |

| Parameters | Description |
|---|---|
| Secondary DNS | Configure the IP address of secondary upstream DNS server on this Interface. |
| Following parameters appear only when you select the mode as **PPPoE** in the **IP Mode**, as shown in Figure 12. | |
| Account Name | Configure name of the Access Concentrator (max 32 characters). Account Name configuration is optional. |
| Service Name | Configure Service name (max 32 characters). Service name configuration is optional. Service name is used to identify a service with the Access Concentrator. Examples of Service name can be a ISP name or a class or quality of service. |
| User Name | Configure User Name for PPPoE authentication. User Name configuration is mandatory. |
| Password | Configure password for PPPoE authentication. Password is optional field. |
| MTU | Configure MTU for PPPoE Interface. MTU ranges from 500-1492 bytes. Default is 1492 bytes. |
| TCP MSS Clamping | Enable or Disable TCP MSS Clamping. |

Figure 11: *Static Mode*

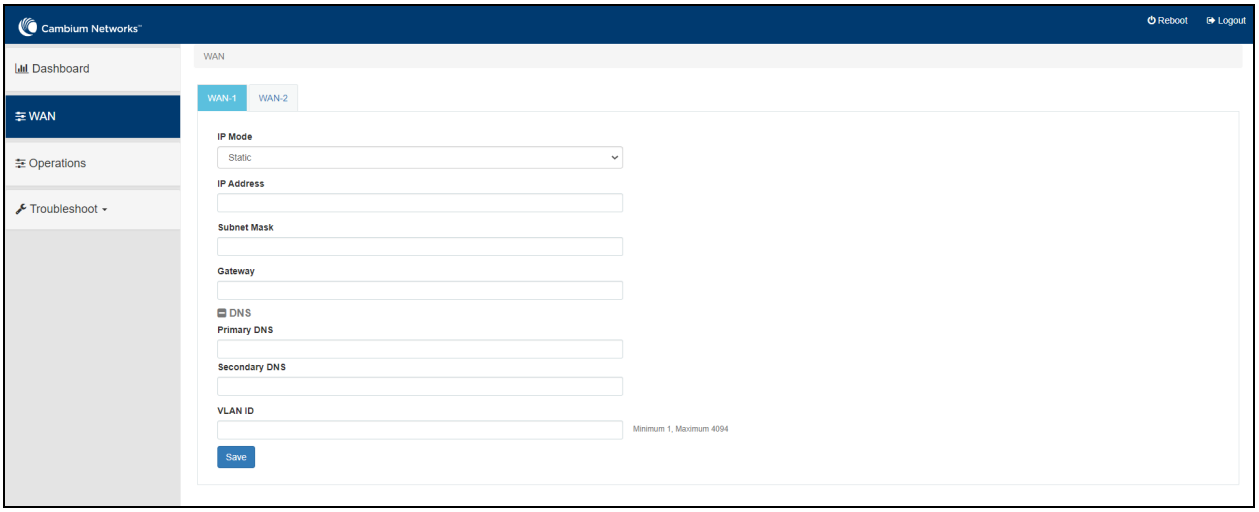
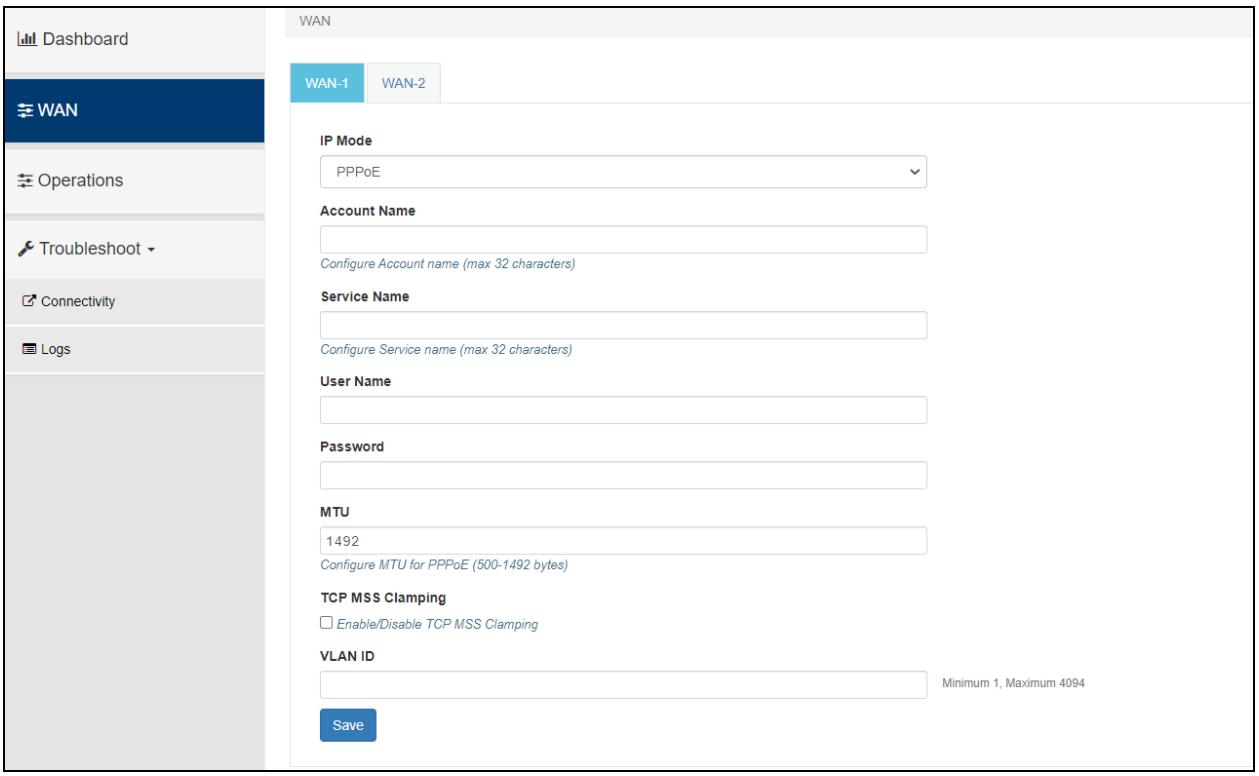


Figure 12: *PPPoE Mode*




3. Click **Save**.

# Operation

This section provides an overview of administrative functionalities for NSE 3000 device such as:

- Firmware upgrade
- System
- Configuration

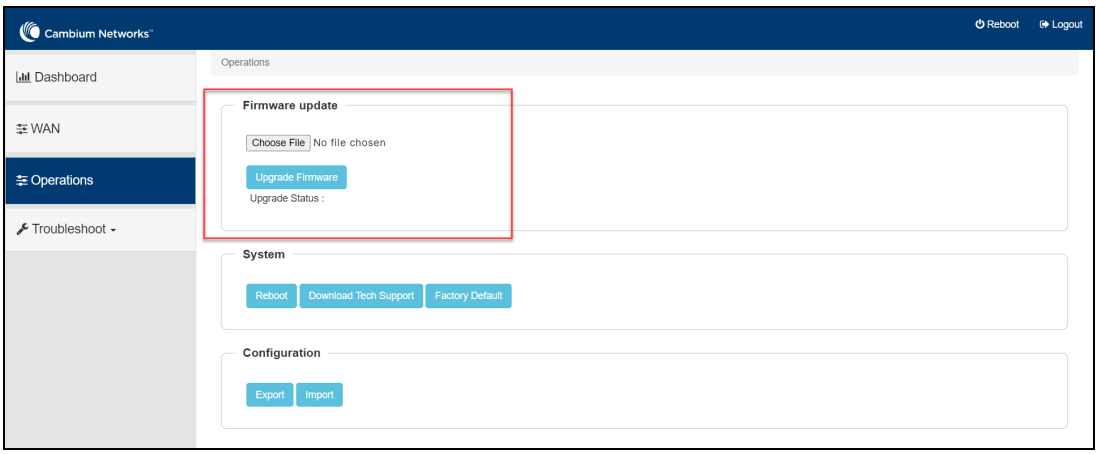
## Firmware upgrade

The running software on the NSE 3000 device can be upgraded to newer firmware. When upgrading from the UI, the user can upload the firmware file from the browser. The same process can be followed to downgrade the device to a previous firmware version if required. Configuration is maintained across the firmware upgrade process.

1. From the main NSE 3000 dashboard page, navigate to the **Operation** page > **Firmware update** section.

   The **Operation** page appears, as shown in Figure 13.

Figure 13: *Firmware update section*




2. Set the values for each parameter, as described in Table 5.

Table 5: Firmware update parameters

| Parameters | Description |
|---|---|
| Choose File | To upload a local file (internally), perform the following steps:<br>a. Click **Choose File** in the choose file field.<br>A file browser window appears.<br>b. Browse the location where you have saved the Firmware file on your machine locally.<br>c. Select the file and click **Open**.<br>The local import file is selected. |
| Upgrade Firmware | To initiate upgrade once the file is selected. |
| Upgrade Status | To view the status of the upgrade in the field. |

3. Click **Upgrade Firmware.**

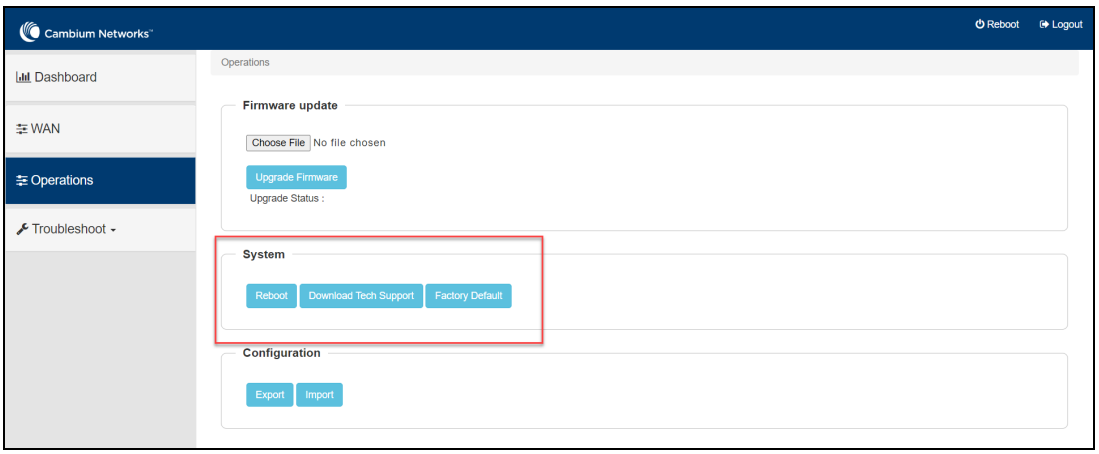
## System

This section provides multiple troubleshooting tools provided by NSE 3000.

1. From the main NSE 3000 dashboard page, navigate to the **Operation** page > **System** section.

   The **Operation** page appears, as shown in Figure 14.

Figure 14: *System section*




2. Set the values for each parameter, as described in Table 6.

Table 6: System parameters

| Parameters | Description |
|---|---|
| Reboot | A pop-up window appears requesting confirmation for reboot. If yes, the device reboots. |
| Download Tech Support | A pop-up window appears requesting permission to download tech support from UI. If yes, the file will be saved in your default download path configured on your system. |
| Factory Default | A pop-up window appears requesting confirmation for factory defaults. If yes, the device will delete all configurations to factory reset and reboot. |

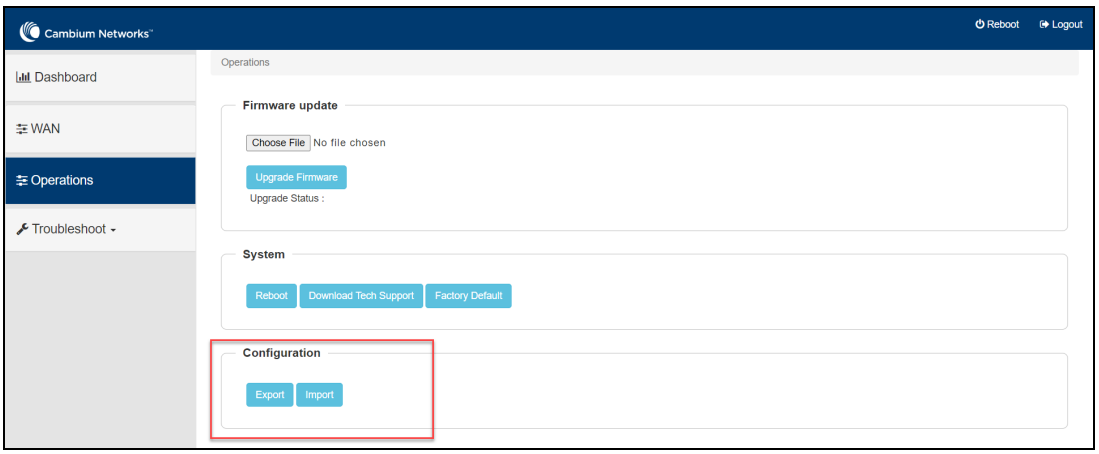
## Configuration

The device configuration can either be exported from the device as a text file or imported into the device from a previous backup. Ensure that when a configuration file is imported onto the device, a reboot is necessary to activate that new configuration.

1. From the main NSE 3000 dashboard page, navigate to **Operation** page > **Configuration** section.

   The **Operation** page appears, as shown in Figure 14.

Figure 15: *Configuration*




2. Set the values for each parameter, as described in Table 7.

Table 7: Configuration parameters

| Parameters | Description |
|---|---|
| Export | When you click the **Export** button, the NSE 3000 model configuration is downloaded by the device. |
| Import | An option to select a location (stored) from where you to import the required data configuration. A local import file (which is saved locally) is uploaded by the browser.<br>To upload a local file (internally), perform the following steps:<br>a. Click **Import** in the choose file field.<br>A file browser window appears.<br>b. Browse the location where you have saved the Import file on your machine locally.<br>c. Select the file and click **Open**.<br>The local import file is selected. |

# Troubleshoot

This chapter provides detailed information about troubleshooting methods supported by NSE. Troubleshooting methods supported by NSE devices as shown below:

- Connectivity
- Logs

## Connectivity

This tool helps to check the accessibility of remote hosts from NSE devices. Three types of tools are supported under this category:

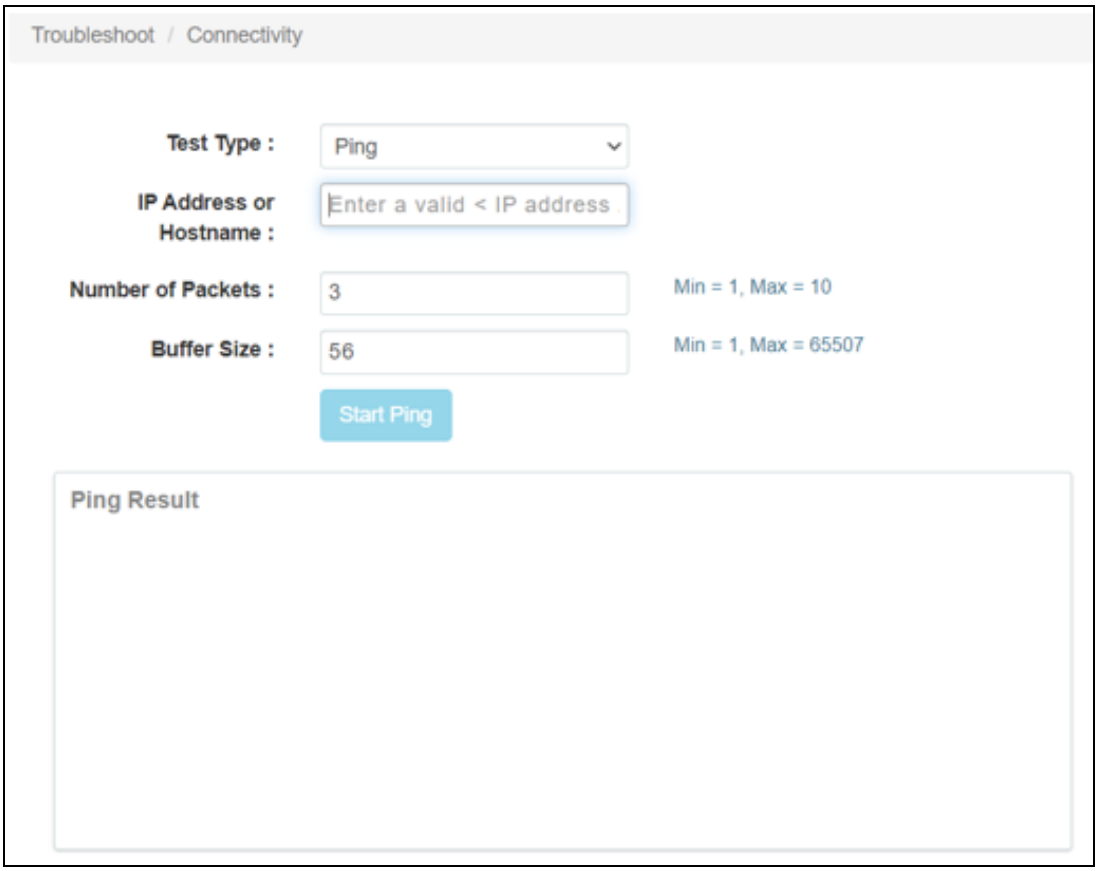
- Ping
- DNS Lookup
- Traceroute

## Ping

To check the Ping result, perform the following steps:

1. Navigate to **Troubleshoot** > **Connectivity.**
2. Select **Test Type** as **Ping** from the drop-down list as shown in Figure 16.

   Figure 16: *Ping connectivity*




3. Set the values for each parameter, as described in Table 8.

   Table 8: Ping parameters

| Parameters | Description |
|---|---|
| IP Address or Hostname | Validates the IPv4 address or Hostname reachability of the destination host. |

| Parameters | Description |
|---|---|
| Number of Packets | Specify the number of packets for this connectivity (Min = 1 and Max = 10). |
| Buffer Size | Specify the buffer size for this connectivity (Min = 1 and Max = 65507). |
| Ping Result | Displays the ping results. |

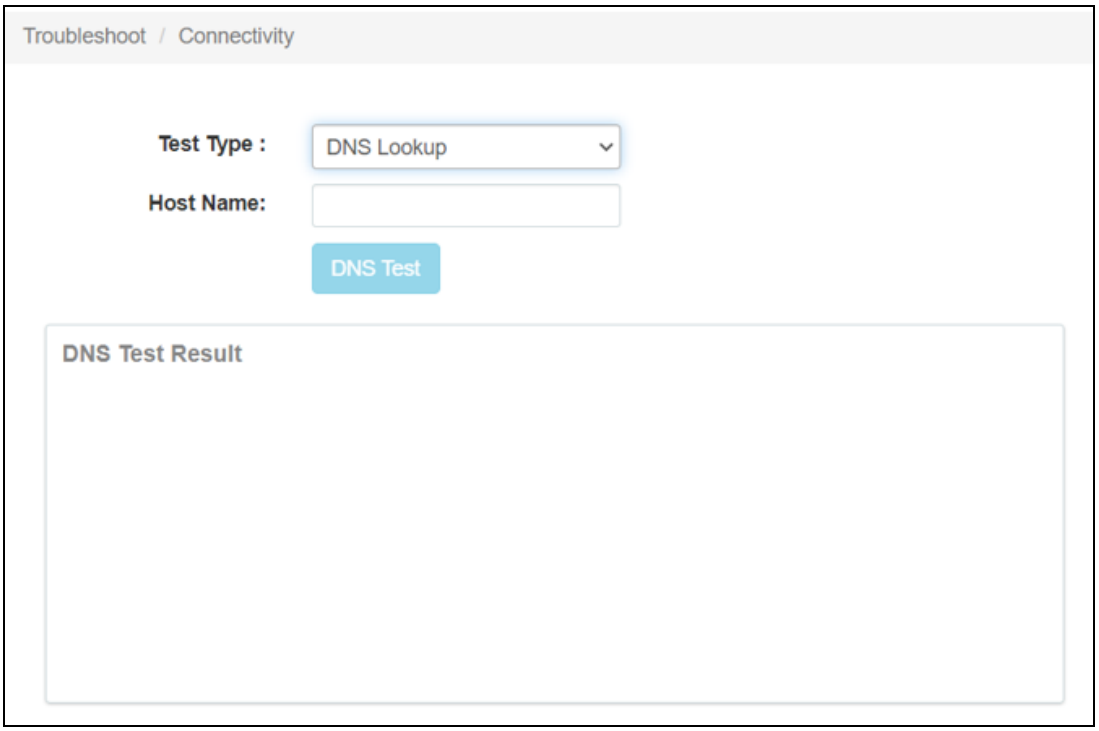
4. Click **Start Ping**.

## DNS Lookup

To check the DNS test result, perform the following steps:

1. Navigate to **Troubleshoot** > **Connectivity.**
2. Select **Test Type** as **DNS Lookup** from the drop-down list as shown in Figure 17.

Figure 17: *DNS Lookup connectivity*




3. Set the values for each parameter, as described in Table 9.

Table 9: DNS Lookup parameters

| Parameters | Description |
|---|---|
| Host Name | Specify the hostname of this connectivity. |
| DNS Test Result | Displays the IPs that are associated with configured Hostname. |

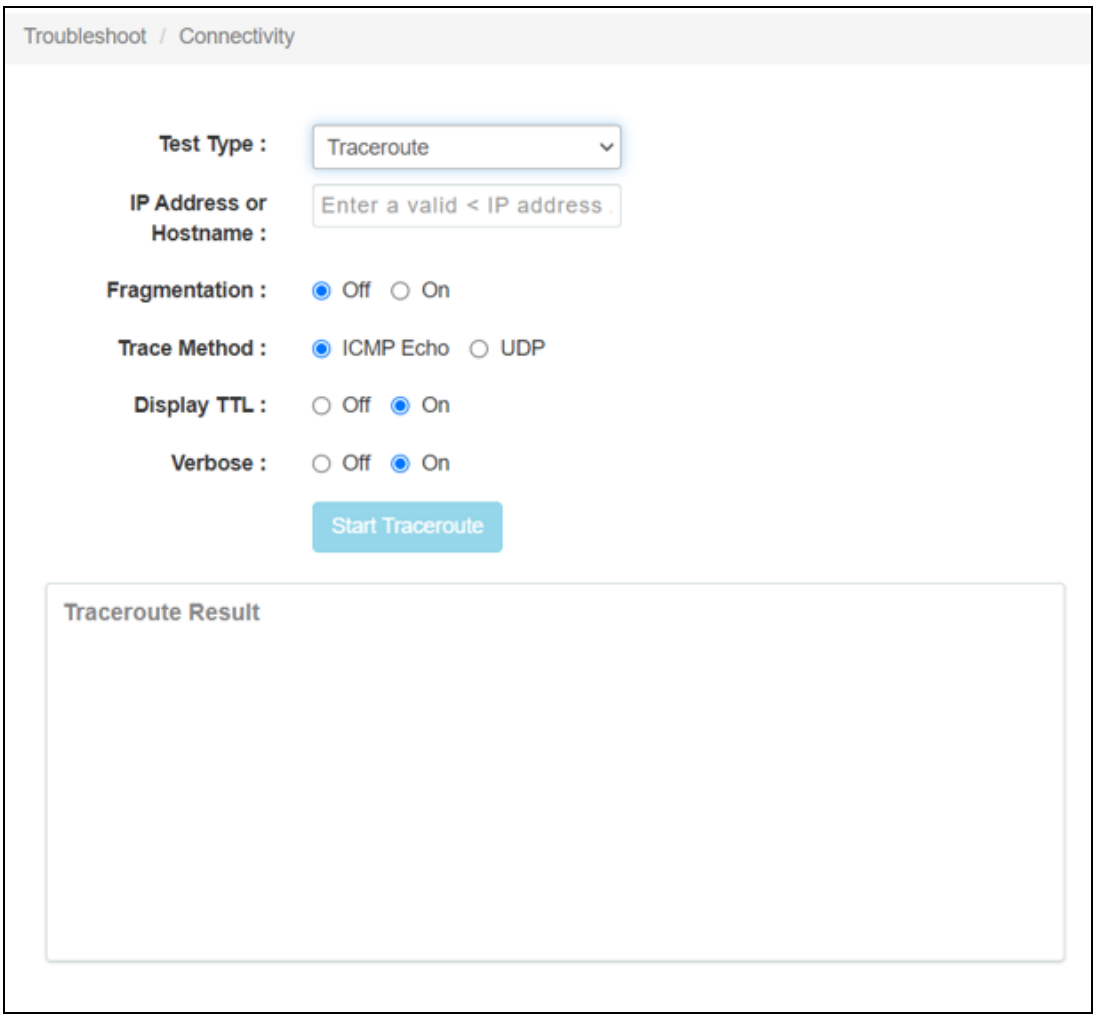
4. Click **DNS Test**.

## Traceroute

To check the Traceroute result, perform the following steps:

1. Navigate to **Troubleshoot** > **Connectivity.**
2. Select **Test Type** as **Traceroute** from the drop-down list as shown in Figure 18.

   Figure 18: *Traceroute connectivity*




3. Set the values for each parameter, as described in Table 10.

   Table 10: Traceroute parameters

| Parameters | Description |
|---|---|
| IP Address or Hostname | Specify the Valid IP address or Hostname for this connectivity. |

| Parameters | Description |
|---|---|
| Fragmentation | Allows to on or off fragmentation. |
| Trace Method | Allows to specify the trace method as ICMP Echo or UDP. |
| Display TTL | Allows to on or off the display TTL. |
| Verbose | Allows to on or off the verbose. |
| Traceroute Result | Displays the result of the traceroute. |

4. Click **Start Traceroute**.

# Logs

Two types of tools are supported under this category:

- Events
- Debug Logs

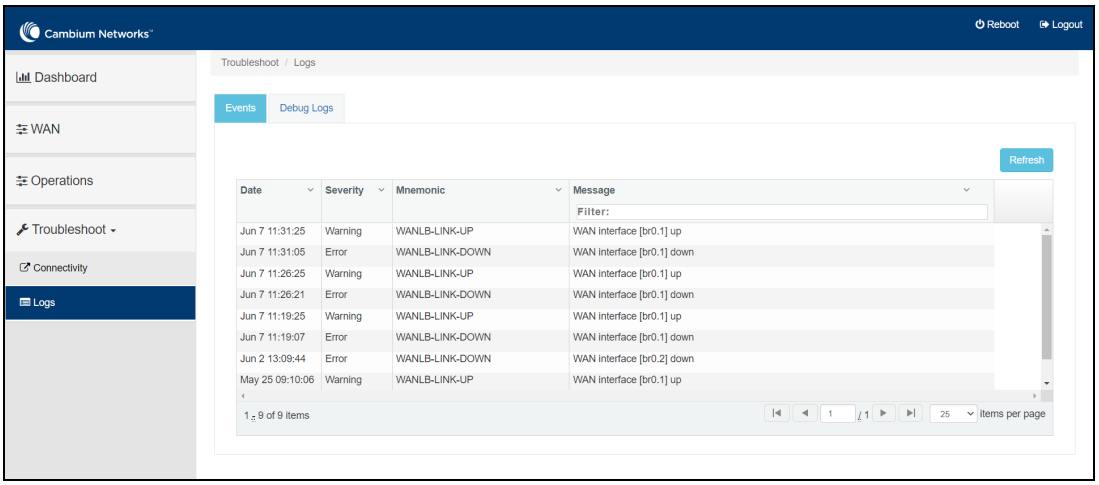
## Events

NSE 3000 devices generate events that are necessary for troubleshooting across. NSE 3000 device generates events for troubleshooting.

1. Navigate to **Troubleshoot** > **Logs > Events** tab.

   The **Events** page appears, as shown in Figure 19.

   Figure 19: *Events*




2. View the data of Events device parameters, as described in Table 11.

Table 11: Events parameters

| Parameters | Description |
|---|---|
| Date | Displays the date and time at which the event was created. |
| Severity | Displays the severity of logs that must be forwarded to the server. |
| Mnemonic | Displays the mnemonic of the device. |
| Message | Displays the message that are sent to the NSE 3000 device. |
| Refresh | Allows to refresh the event logs. |

## Debug Logs

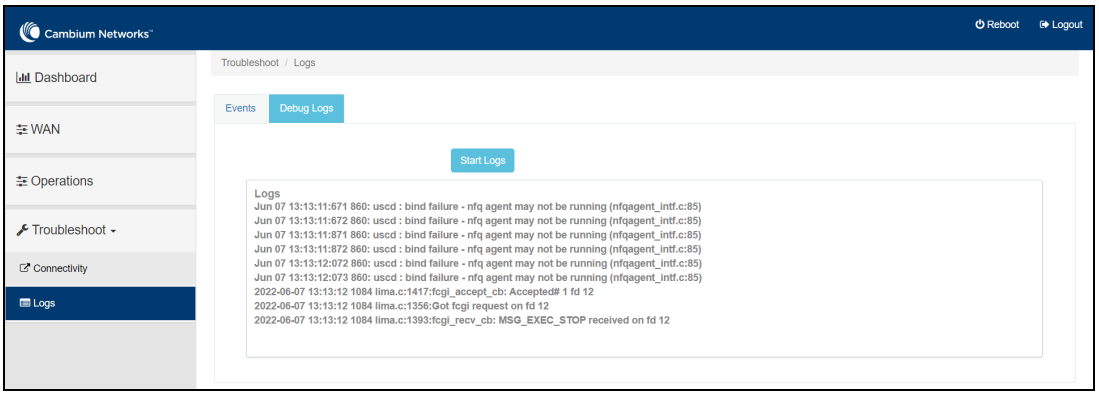
NSE 3000 devices support multi-level logging, which will ease debug issues.

To create a Debug Logs, perform the following steps:

1. Navigate to **Troubleshoot** > **Logs** > **Debug Logs** tab.

   The Debug Logs page appears, as shown in Figure 20.

   Figure 20: *Debug Logs page*




2. View the data of **Debug Logs** device parameters, as described in Table 11.

   Table 12: Events parameters

| Parameters | Description |
|---|---|
| Start Logs | Initiates the Log collection process. |
| Logs | Displays the logs of the NSE 3000 device. |

3. Click **Start Logs**.

# Glossary

| Term | Definition |
|---|---|
| AP | Access Point Module. One module that distributes network or Internet services to subscriber modules. |
| API | Application Program Interface |
| ARP | Address Resolution Protocol. A protocol defined in RFC 826 to allow a network element to correlate a host IP address to the Ethernet address of the host. |
| BT | Bluetooth |
| DFS | See Dynamic Frequency Selection |
| DHCP | Dynamic Host Configuration Protocol defined in RFC 2131. The protocol that enables a device to be assigned a new IP address and TCP/IP parameters, including a default gateway, whenever the device reboots. Thus, DHCP reduces configuration time, conserves IP addresses, and allows modules to be moved to a different network within the system. |
| Ethernet Protocol | Any of several IEEE standards that define the contents of frames that are transferred from one network element to another through Ethernet connections. |
| FCC | Federal Communications Commission of the U.S.A. |
| GPS | Global Positioning System. A network of satellites that provides absolute time to networks on earth, which use the time signal to synchronize transmission and reception cycles (to avoid interference) and to provide reference for troubleshooting activities. |
| UI | User interface. |
| HTTP | Hypertext Transfer Protocol, used to make the Internet resources available on the World Wide Web. |
| HTTPS | Hypertext Transfer Protocol Secure |
| HT | High Throughput |
| IP Address | The 32-bit binary number identifies a network element by both network and host. See also Subnet Mask. |
| IPv4 | The traditional version of Internet Protocol, defines 32-bit fields for data transmission. |
| LLDP | Link Layer Discovery Protocol |
| MAC Address | Media Access Control address. The hardware address that the factory assigns to the module for identification in the Data Link layer interface of the Open Systems Interconnection system. This address serves as an electronic serial number. |
| MIB | Management Information Base. Space that allows a program (agent) in the network to relay information to a network monitor about the status of defined variables (objects). |
| MIR | See Maximum Information Rate. |
| PPPoE | Point to Point Protocol over Ethernet. Supported on SMs for operators who use PPPoE in other parts of their network operators who want to deploy PPPoE to realize per-subscriber authentication, metrics, and usage control. |

| Term | Definition |
|---|---|
| Proxy Server | Network computer that isolates another from the Internet. The proxy server communicates for the other computer, and sends replies to only the appropriate computer which has an IP address that is not unique or not registered. |
| PoE | Power over Ethernet. |
| SLA | Service Level Agreement |
| VLAN | Virtual local area network. An association of devices through software that contains broadcast traffic, as routers would, but in the switch-level protocol. |
| VPN | A virtual private network for communication over a public network. One typical use is to connect remote employees, who are at home or in a different city, to their corporate network over the Internet. Any of several VPN implementation schemes are possible. SMs support L2TP over IPSec (Level 2 Tunneling Protocol over IP Security) VPNs and PPTP (Point to Point Tunneling Protocol) VPNs, regardless of whether the Network Address Translation (NAT) feature enabled. |

# Cambium Networks

Cambium Networks delivers wireless communications that work for businesses, communities, and cities worldwide. Millions of our radios are deployed to connect people, places, and things with a unified wireless fabric that spans multiple standards and frequencies of fixed wireless and Wi-Fi, all managed centrally via the cloud. Our multi-gigabit wireless fabric offers a compelling value proposition over traditional fiber and alternative wireless solutions. We work with our Cambium certified Connected Partners to deliver purpose built networks for service provider, enterprise, industrial, and government connectivity solutions in urban, suburban, and rural environments, with wireless that just works.

| | |
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