SonicOS 7.0

Diagnostics for Policy Mode

Administration Guide

SONICWALL®

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Introduction to Diagnostics for Policy Mode

This administration guide provides information about the SonicOS Diagnostics feature for the Policy Mode.

Diagnostic tools allow the administrator to test connectivity by performing a Ping, TCP connection test, DNS lookup, reverse lookup, and trace route for a specific IP address or web site. Other Diagnostics for Policy Mode tools provide a way to view or monitor the Geo and Botnet, PMTU Discovery, and other features.

The following comparison table gives the Diagnostics features available for SonicOS Classic Mode and Policy Mode:

Diagnostic Tools Features	SonicOS 7 Classic Mode	SonicOS 7 Policy Mode
Tech Support Report	Available	Available
Check Network Settings	Available	Available
DNS Name Lookup	Available	Available
Network Path	Available	Available
Ping	Available	Available
Trace Route	Available	Available
Real-Time Blacklist	Available	Available
Reverse Name lookup	Available	Available
Connection TopX	Available	Not Available
Geo and Botnet	Available	Available
MX and Banner	Available	Not Available
GRID Check	Available	Not Available
URL Rating Request	Available	Available
PMTU Discovery	Available	Available
Switch Diagnostics	Available	Available
Policy Lookup	Not Available	Available

The following comparison table gives the platforms supported:

SonicWall Firewall Model	SonicOS 7 Classic Mode	SonicOS 7 Policy Mode
Hardware Firewalls		
TZ Series: TZ270, TZ270W, TZ370, TZ370W, TZ470, TZ470W, TZ570, TZ570W, TZ570P, TZ670	Supported	Not Supported
NSa Series: NSa 2700, NSa 3700, NSa 4700, NSa 5700, and NSa 6700	Supported	Not Supported
NSsp Series: NSsp 10700, NSsp 11700, and NSsp 13700	Supported	Not Supported
NSsp Series: NSsp15700	Not Supported	Supported
Virtual Firewalls		
NSv Series: NSv 70, NSv 170, NSv 270, NSv 470, and NSv 870	Supported	Supported

NOTE: The Terminal option that was available on Diagnostics menu is now moved to the notification center and no longer appears in the Diagnostics menu. For more information, refer to Terminal.

Navigate to **Device** > **Diagnostics**, the various tools available in Diagnostics menu group includes:

- Tech Support Report
- Check Network Settings
- DNS Name Lookup
- Network Path
- Ping
- Trace Route
- Real-Time Blacklist
- Reverse Name Lookup
- Geo and Botnet
- URL Rating Request
- PMTU Discovery
- Switch Diagnostics
- Policy Lookup

For Troubleshooting diagnostics tools, refer to the knowledge base articles Troubleshooting and to monitor, refer to the Tools & Monitors Administration Guide

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Terminal

Navigate to notification center, click **Open SSH terminal session** icon to start a SSH Console Window to issue commands directly to the network security appliance.

ⓘ **NOTE:** SSH management must be enabled for the interface of the device before a SSH session can be started successfully.

To enable SSH management of the device:

1. Navigate to **Network > Interfaces**.
2. Select the interface for which you want to enable SSH management and click the **Edit** icon.
3. In the **Management** section, click the **SSH** toggle to activate SSH management of the device (if it is not already enabled).
4. Click **OK**.

To start a SSH management session:

1. Navigate to notification center, click **Open SSH terminal session** icon.
2. Click **OK** when the warning displays with the IP address.
3. The SSH session will start by requesting the administrator login credentials on SSH Console Window.
   ⓘ **NOTE:** SSH management must be ON for this interface.

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Tech Support Report

The Tech Support Report generates a detailed report of the SonicWall security appliance configuration and status and saves it to the local hard disk using the Download Tech Support Report button. This file can then be emailed to SonicWall Technical Support to help assist with a problem.

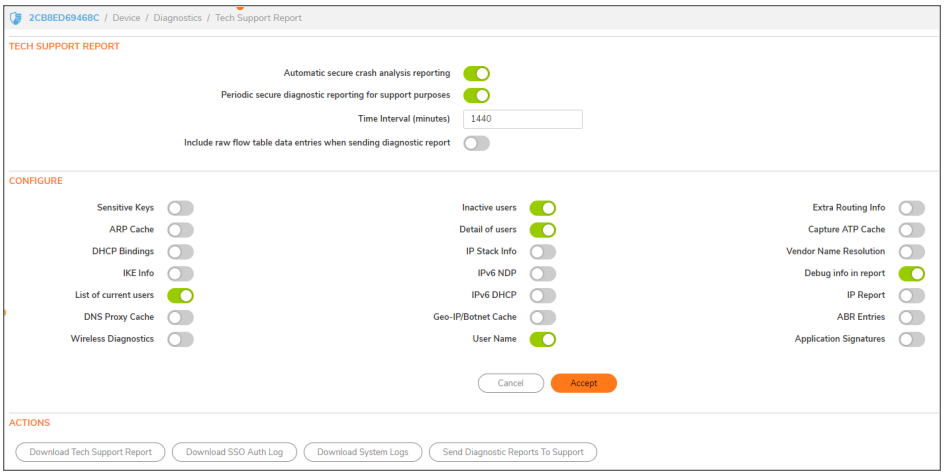
ⓘ | **NOTE:** You must register your SonicWall security appliance on MySonicWall to receive technical support.

Topics:

Completing a Tech Support Request

Before emailing the Tech Support Report to the SonicWall Technical Support team, complete a Tech Support Request Form at https://www.mysonicwall.com. After the form is submitted, a unique case number is returned. Include this case number in all correspondence, as it allows SonicWall Technical Support to provide you with better service.

Generating a Tech Support Report



To generate a Tech Support Report (TSR):

1. Navigate to **Device** > **Diagnostics** > **Tech Support Report**.
2. In the Tech Support Report section, turn on any of the following report options:
    - **Sensitive Keys** - Saves shared secrets, encryption, and authentication keys to the report.
    - **ARP Cache** - Saves a table relating IP addresses to the corresponding MAC or physical addresses.
    - **DHCP Bindings** - Saves entries from the firewall DHCP server.
    - **IKE Info** - Saves current information about active IKE configurations.
    - **List of current users** - Lists all currently logged in active local and remote users.
    - **Wireless Diagnostics** - Lists log data if the SonicPoint or internal wireless radio experiences a failure and reboots.
    - **DNS Proxy Cache** - This option is not selected by default.
    - **Inactive users** - Lists the users with inactive sessions. Selected by default.
    - **Detail of users** - Lists additional details of user sessions, including timers, privileges, management mode if managing, group memberships, CFS policies, VPN client networks, and other information. The Current users report checkbox must be enabled first to obtain this detailed report.
    - **IP Stack Info** - This option is not selected by default.
    - **IPv6 NDP** - This option is not selected by default.
    - **IPv6 DHCP** - This option is not selected by default.
    - **Geo-IP/Botnet Cache** - Saves the currently cached Geo-IP and Botnet information.

- **User Name** - Shows user name in the report.
- **Extra Routing Info** - Shows extra routing information in the report.
- **Capture ATP Cache** - Saves the currently cached Capture information.
- **Vendor Name Resolution** - This option is not selected by default.
- **Debug Info in report** - Specifies whether the downloaded TSR is to contain debug information.
- **IP Report** - This option is not selected by default.
- **ABR Entries** - This option is not selected by default.
- **Application Signatures** - Shows application signature information in the report.

3. Click **Accept** to save the changes.
4. Click **Download Tech Support Report** under the **Actions** section to save the file to your system.
5. Click **Download Chassis Log** under the **Actions** section to save the file to your system.
6. Click **OK** to save the file.
7. Attach the report to your Tech Support Request email.
8. To send the TSR, system preferences, and trace log to SonicWall Engineering (not to SonicWall Technical Support), click **Send Diagnostic Reports to Support** under the **Actions** section. The Status indicator at the bottom of the page displays **Please wait!** while the report is sent, and then displays **Diagnostic reports sent successfully**. You would normally do this after talking to Technical Support.
9. To download the SSO authentication log, click **Download SSO Auth Log** under the **Actions** section .
10. To download system logs, click **Download System Logs** under the **Actions** section and then click **Confirm.**
11. To send diagnostic files to SonicWall Tech Support for crash analysis, select the **Automatic secure crash analysis reporting** toggle switch
    NOTE: This toggle switch is not applicable for NSsp 15700.
12. To periodically send the TSR, system preferences, and trace log to MySonicWall for SonicWall Engineering:
    a. Select the **Periodic secure diagnostic reporting for support purposes** switch.
    b. Enter the interval in minutes between the periodic reports in the **Time Interval (minutes)** field. The default is 1440 minutes (24 hours).
13. To include flow table data in the TSR, toggle the switch for **Include raw flow table data entries when sending diagnostic report**.
    NOTE: This toggle switch is not applicable for NSsp 15700.

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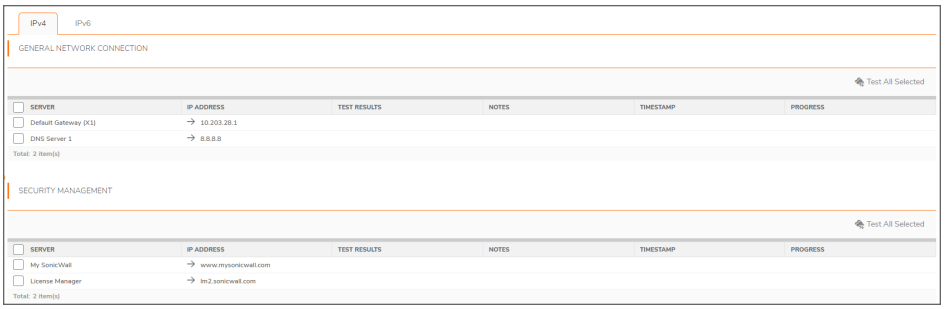
Check Network Settings

Check Network Settings is a diagnostic feature that automatically checks the network connectivity and service availability of several pre-defined functional areas of SonicOS, returns the results, and attempts to describe the causes if any exceptions are detected.



This tool helps you locate the problem area when users encounter a network problem. The feature lists both IPv4 and IPv6 network settings in different tabs.

Specifically, Check Network Settings automatically tests the following functions:

- Default Gateway settings
- DNS settings
- MySonicWall server connectivity
- License Manager server connectivity
- Content Filter server connectivity

The return data consists of two parts:

- Test Results – Provides a summary of the test outcome
- Notes – Provides details to help determine the cause if any problems exist

The **Check Network Settings** feature is dependent on the **Network Monitor** feature available under **Network** | **Network Monitor** view. Whenever the Check Network Settings tool is being executed (except during the Content Filter test), a corresponding Network Monitor Policy appears on the **Network** | **Network Monitor** page, with a special diagnostic tool policy name in the form:

```
diagTestPolicyAuto_<IP_address/Domain_name>_0
```

Navigate to **Device** > **Diagnostics** > **Check Network Settings**.to use the Check Network Settings tool, first select it in the Diagnostic Tools drop-down list and then click the Test button in the row for the item that you want to test. The results are displayed in the same row. A green check mark signifies a successful test, and a red X indicates that there is a problem.

To test multiple items at the same time, check the box for each desired item and then click **TEST ALL SELECTED**.

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DNS Name Lookup

The DNS lookup tool returns the IPv4 and IPv6 IP address of a URL. If you enter an IPv4 and/or IPv6 IP address, the tool returns the domain name for that address. If you enter a domain name, the tool returns the DNS server used and the resolved address.

Navigate to **Device** > **Diagnostics** > **DNS Name Lookup**, with the **DNS Server** radio buttons, you can select either a **System** or **Customized** DNS server. The options change, depending on which you choose.

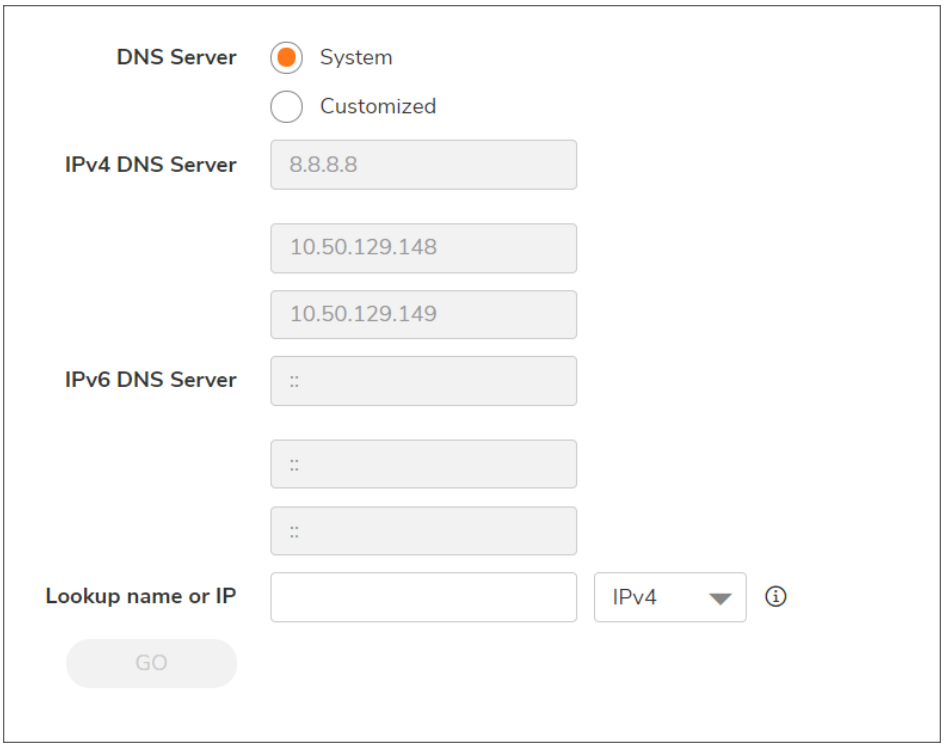
The **IPv4/IPv6 DNS Server** fields display the IP addresses of the DNS Servers configured on the firewall. If there is no IP address (0.0.0.0 for IPv4 or :: for IPv6) in the fields, you must configure them on the **Network** > **DNS** page.

Under **Lookup name or IP**, enter the URL and select, IPv4, IPv6, or All and click **GO**.

Resolving a System DNS Server

To resolve a system DNS Server:

1. Select **System** for the DNS Server.



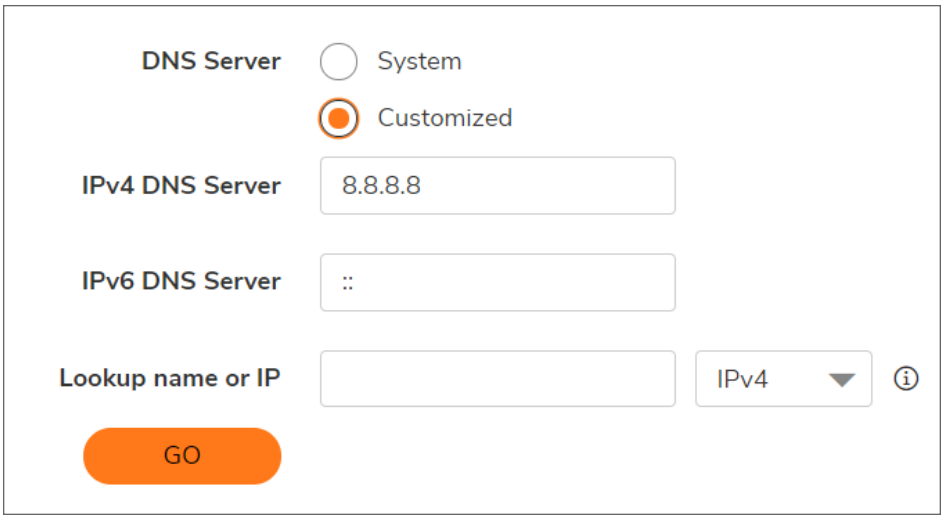
2. In the **Lookup name or IP** field, enter either the domain name or the IP address.
3. Select the type of IP address from the drop-down menu:
    - IPv4 (default)
    - IPv6
    - All
4. Click **GO**. The firewall returns the matching pair of addresses and domain names.

IMPORTANT: When specifying a domain name, do not add http or https to the name.

Resolving a Customized DNS Server

To resolve a Customized DNS Server:

1. Select **Customized** under DNS Server.



2. If the DNS Server IP address is not populated, enter it in the IPv4 or IPv6 field.
3. In the **Lookup name or IP** field, enter either the domain name or the IP address.
4. Select the type of IP address from the drop-down menu:
    - IPv4 (default)
    - IPv6
    - All
5. Click **GO**.

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Network Path

Enter an IP address to determine the network path of it. The Network Path feature finds if the IP is located on a specific network interface, if it reached a router gateway IP address, and if it reached through an Ethernet address.

To find network path of an IP address:

1. Navigate to **Device** > **Diagnostics** > **Network Path**.
2. Enter the IP address of the network.
3. Click **GO**.

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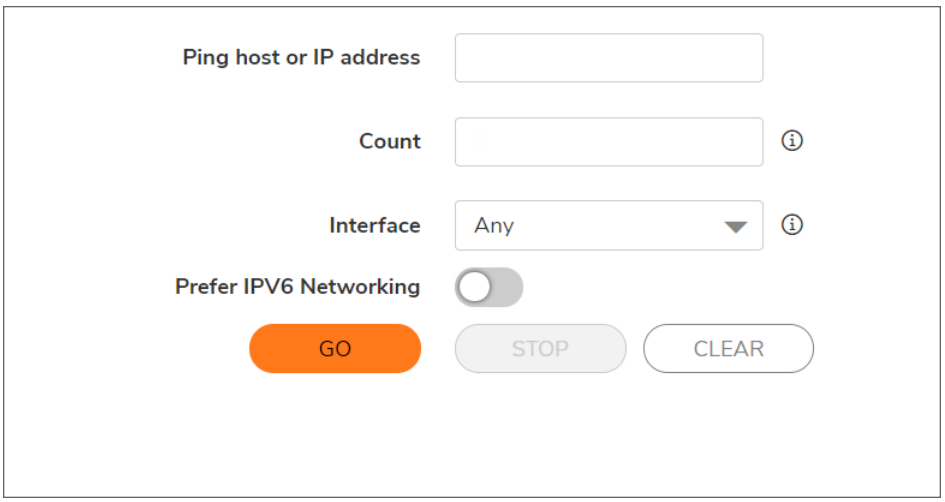
Ping

The Ping test sends a packet off a machine on the Internet and returns it to the sender. This test shows if the firewall is able to contact the remote host. If users on the LAN are having problems accessing services on the Internet, try pinging the DNS server, or another machine at the ISP location. If the test is unsuccessful, try pinging devices outside of the ISP. If you can ping devices outside of the ISP, then the problem lies with the ISP connection.



To ping an IP address:

1. Navigate to **Device** > **Diagnostics** > **Ping**
2. Specify the **Ping host or IP address** of the target device.
3. Specify the **Count**.
4. In the **Interface** drop-down menu, select which WAN interface you want to test the ping from. Selecting **ANY** allows the appliance to choose among all interfaces—including those not listed in the drop-down.
5. Toggle **Prefer IPv6 Networking** switch if you prefer pinging to an IPv6 address.
6. Click **GO**.

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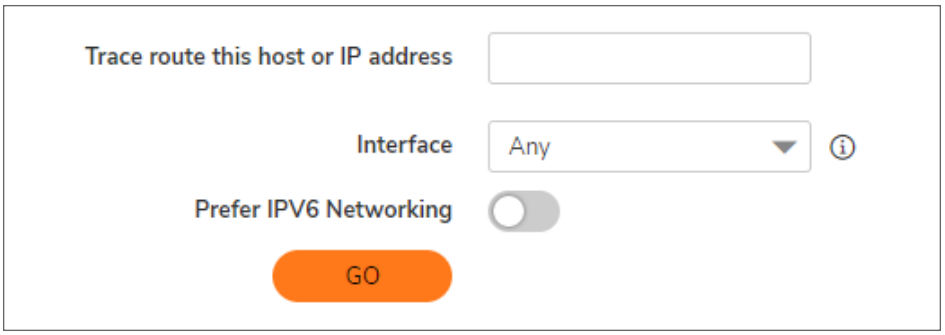
Trace Route

Trace Route is a diagnostic utility that assists in diagnosing and troubleshooting router connections on the Internet. By using Internet UDP packets similar to Ping packets, Trace Route can test interconnectivity with routers and other hosts that are spread along the network path until the connection fails or until the remote host responds.

Trace Route tool includes a IPv6 networking option. When testing interconnectivity with routers and other hosts, SonicOS uses the first IP address that is returned and shows the actual Trace Route address. If both IPv4 and IPv6 addresses are returned, by default, the firewall checks the IPv4 address. If the **Prefer IPv6 Networking** option is enabled, the check only IPv6 address.



To troubleshoot with Trace Route:

1. Navigate to **Device** > **Diagnostics** > **Trace Route**.
2. Type the IP address or domain name of the destination host in the **TraceRoute this host or IP address** field.
3. In the **Interface** drop-down menu, select which WAN-specific interface you want to test the trace route from. Selecting ANY, the default, allows the firewall to choose among all interfaces—including those not listed in the drop-down menu.
4. To TraceRoute for IPv6, select the **Prefer IPv6 Networking** checkbox.
5. Click **GO**. Depending on the route, this may take a few minutes. A popup table displays with each hop to the destination host. By following the route, you can diagnose where the connection fails between the firewall and its destination.

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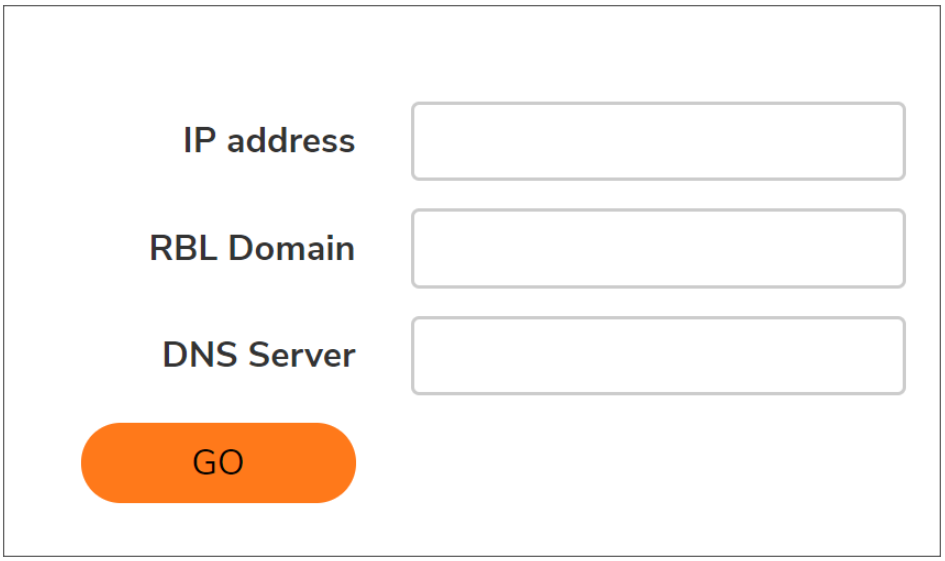
Real-Time Blacklist

The Real-Time Blacklist feature allows you to blacklist SMTP IP addresses, RBL services, and DNS servers.



To blacklist an IP address, RBL domain, or a DNS server:

1. Navigate to **Device** > **Diagnostics** > **Real-Time Blacklist**.
2. Enter an IP address in the **IP address** field, a FQDN for the RBL in the **RBL Domain** field, or DNS server information in the **DNS Server** field.
3. Click **GO**.

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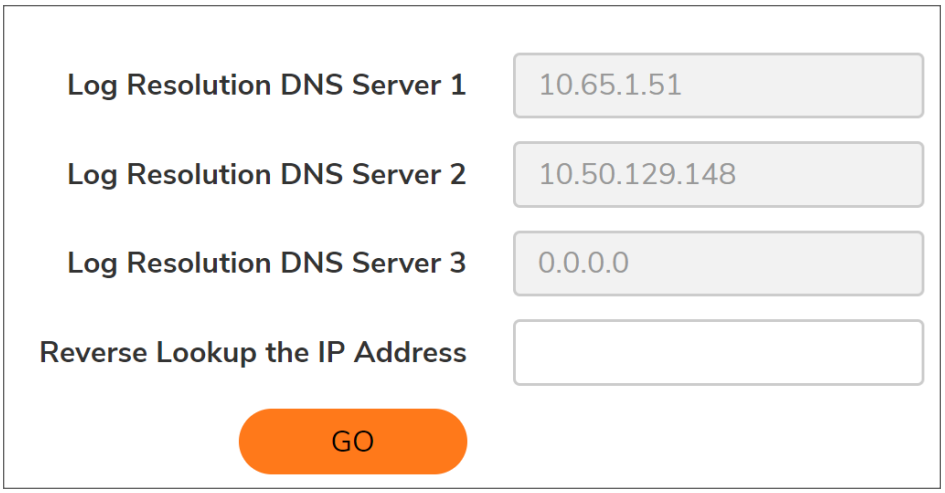
Reverse Name Lookup

The Reverse Name Lookup feature returns the DNS server name for a given IP address. The Log Resolution DNS server 1, 2, and 3 shows the DNS servers configured for the firewall. You can manually configure the DNS servers from **Network > DNS**.



To look up an IP address:

1. Navigate to **Device** > **Diagnostics** > **Reverse Name Lookup**.
2. Enter the IP address in the **Reverse Lookup the IP Address** field.
3. Click **GO**.

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Geo and Botnet

The Geo and Botnet Lookup feature allows you to look up the connections to or from a geographic location based on IP address and to or from Botnet command and control servers.

To troubleshoot with GEO Location and BOTNET Server Lookup:

1. Navigate to **Device** > **Diagnostics** > **Geo and Botnet**.
2. Type the IP address or domain name of the destination host in the **Lookup IP** field.
3. Click **GO**. The result displays underneath the Lookup IP field.

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URL Rating Request

Content Filtering Service feature classifies websites under 64 categories based on the content. You can find information about a website by looking up the URL in the CFS URL Rating Request feature.

To look up a URL:

1. Navigate to **Device** > **Diagnostics** > **URL Rating Request**.
2. Enter the URL in the **Lookup Rating for URL** field.
3. Click **Go**.

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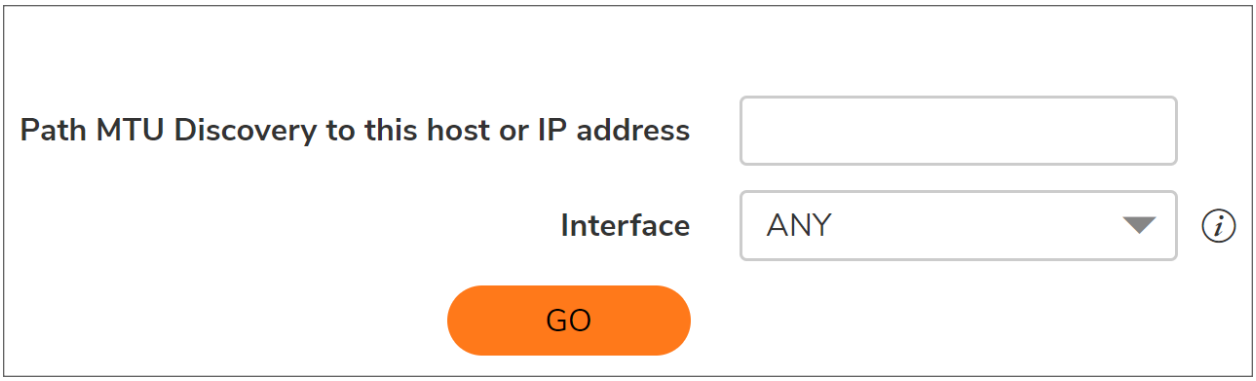
PMTU Discovery

PMTU Discovery is a diagnostic tool that uses a standardized technique for determining the maximum transmission unit (MTU) size on the network path between two Internet Protocol (IP) hosts, usually with the goal of avoiding IP fragmentation. PMTU Discovery works with both IPv4 and IPv6 protocols.



To troubleshoot with PMTU Discovery::

1. Navigate to **Device** > **Diagnostics** > **PMTU Discovery**.
2. Type the IP address or domain name of the destination host in the **Path MTU Discovery to this host or IP address** field.
3. In the Interface drop-down menu, select which WAN-specific interface you want to test the trace route from. Selecting **ANY**, the default, allows the firewall to choose among all interfaces—including those not listed in the drop-down menu.
4. Click **GO**.

   Depending on the route, this may take a few minutes. A pop-up table displays with each hop to the destination host. By following the route, you can diagnose where the connection fails between the firewall and the destination.

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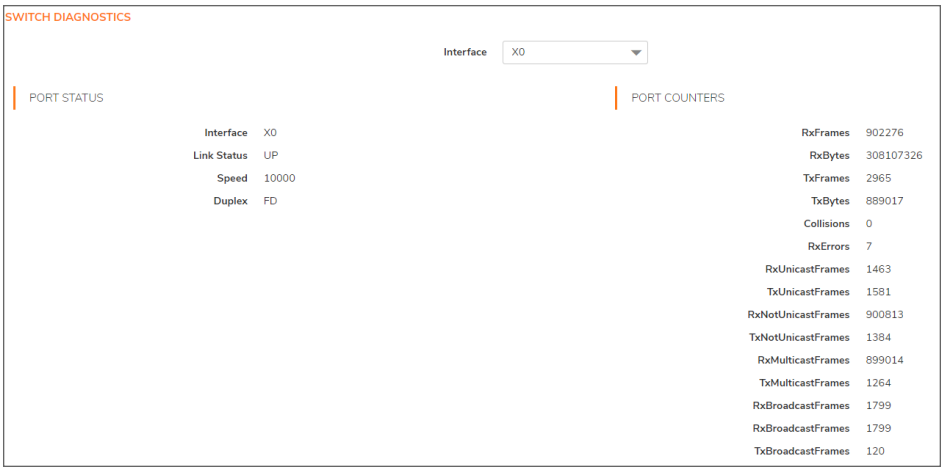
Switch Diagnostics

The **Switch Diagnostics** page displays the port status and port counters of a SonicWall Switch connected to the firewall.



To access Switch Diagnostics:

1. Navigate to **Device** > **Diagnostics** > **Switch Diagnostics**.
2. Select the interface that is connected to the Switch from the **Interface** drop-down menu.

Policy Lookup

The **Policy Lookup** page allows you to search for policies based on specific criteria.

The available types of policies you can search for include:

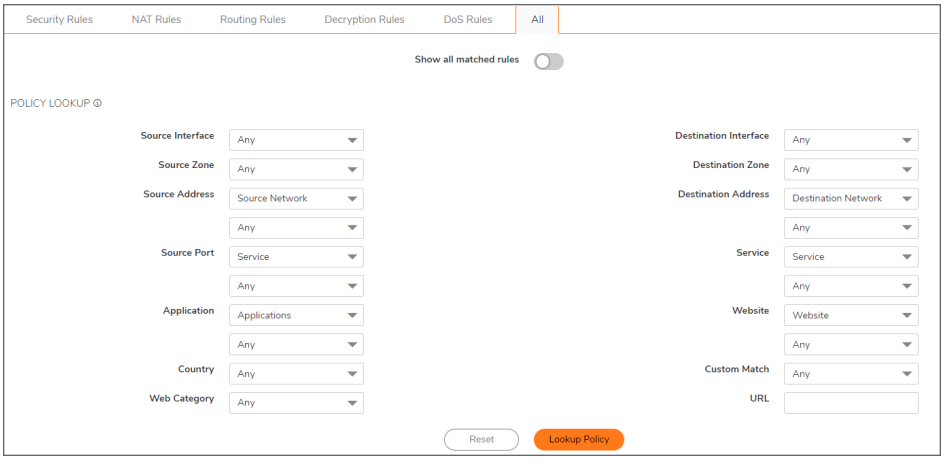
- **Security Rules**
- **NAT Rules**
- **Routing Rules**
- **Decryption Rules**
- **DoS Rules**

You can also click **All** search for and view policies from all of the categories.

To search for policies:

- Navigate to **Device > Diagnostics > Policy Lookup**.
- Click the tab for the policy category you want to search or click **All** to search all of the categories.
- Select **Show all matched rules** to view the results from all of the categories on the page you selected.
- In the **Policy Lookup** section, select the criteria for the policies you want listed.
- Click **Lookup Policy** to search for policies that match the criteria you specified.
  The policies that match your criteria are displayed in the **Result** section at the bottom of the page.

Click **Reset** to clear all of your selection and begin a new query.



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SonicWall Support

Technical support is available to customers who have purchased SonicWall products with a valid maintenance contract.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. To access the Support Portal, go to https://www.sonicwall.com/support.

The Support Portal enables you to:

- View knowledge base articles and technical documentation
- View and participate in the Community forum discussions at https://community.sonicwall.com/technology-and-support.
- View video tutorials
- Access https://mysonicwall.com
- Learn about SonicWall Professional Services
- Review SonicWall Support services and warranty information
- Register for training and certification
- Request technical support or customer service

To contact SonicWall Support, visit https://www.sonicwall.com/support/contact-support.

About This Document

SonicOS Diagnostics for Policy Mode Administration Guide
Updated - August 2023
Software Version - 7.0
232-005332-30 Rev B

End User Product Agreement

To view the SonicWall End User Product Agreement, go to: https://www.sonicwall.com/legal/end-user-product-agreements/.

Open Source Code

SonicWall Inc. is able to provide a machine-readable copy of open source code with restrictive licenses such as GPL, LGPL, AGPL when applicable per license requirements. To obtain a complete machine-readable copy, send your written requests, along with certified check or money order in the amount of USD 25.00 payable to "SonicWall Inc.", to:

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