

Introducing LanTopoLog

LanTopoLog 2 version 2.xx

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License: Shareware

The network topology discovery function works without any limitations in the unregistered version so you can use the program as free network mapper

System requirements: Windows XP/2003/2008/Vista/7/8/2012/10

LanTopoLog 2 is an application that provides physical network topology discovery, visualization and monitoring.

Key features

- Automatic physical network topology discovery based on SNMP
- Provide detailed and searchable physical network topology map so you can quickly isolate network connectivity failures
- Network Diagram views show which network devices are connected to each switch port; port connections are labeled with port numbers
- Show VLAN IDs
- Ability to auto-discovery new devices as they are added to your network
- LanTopoLog also includes network monitoring tools
- Monitoring device's state (active/inactive) in real-time using ICMP
- Generating alarms when there are failures in the network
- E-mail alerts notifying
- Web browser-based access from anywhere in the network
- LanTopoLog use WMI queries to collect computer inventory information
- Export switch connection table to csv file
- Export computer list to csv file
- Display device manufacturer
- Display each port's speed
- Network traffic monitoring
- Notify the administrator when traffic thresholds exceeded
- Easy-to-use interface
- The program do not write anything to the operating system area (registry, system folders) and is portable
- The program is safe to use and cannot send any data to anywhere.

Website www.lantopolog.com

Feel free to email me any errors or comments to support@lantopolog.com

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LanTopoLog 2 License Agreement

LanTopoLog 2 version 2.xx

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You are hereby licensed to use the Demo version of the Software for an unlimited period. When you purchase LanTopoLog, you will receive a license key file that will convert the demo into the full version. The license key is bound up to 3 switches that you select during the registration. At least one of them must always be present in the LanTopoLog map (although may be temporarily turned off), otherwise your copy of LanTopoLog will be considered as unregistered. If all of them are replaced then you need to purchase the new license. In the future you can add new switches to your network, however, your license remains valid. You need only one license for local network with up to 1000 managed switches. One license allows you to run LanTopoLog on multiple computers simultaneously.

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All updates to the LanTopoLog 2 are free.

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Discovery steps

To perform the network topology discovery follow the instructions in the tabs "Step 1", "Step2", "Step 3".

Step 1

1. Specify ranges of IP addresses for switch discovery.

For example: 192.168.0.200-254 192.168.0.* 172.16.200-255.*

Obviously you will need to change the SNMP community string from "public" to match your community string.

2. Discover the switches

Click "Discover within all the ranges" or "Discover within the checked ranges"

Discovered switches will be added to the list of SNMP devices (see table right).

If some of your switches are not discovered then check the following items:

- is switch SNMPv1 enabled ?
- is the SNMP community string was entered correctly ?
- test SNMP access with any other SNMP utility

3. Check that all switches are present within the list of discovered devices.

If it is not so, then repeat Step 1 - Sub-Step 1,2

Delete from the list the SNMP devices that are not switches.

Step 2

1. Click "Collect SNMP data from the switches"

In this step the program gathers bridge forwarding table data from the switches.

Changing values in the column "Number of Learned MACs" indicates that collecting process goes successfully. If it is not so, then test access to SNMP Bridge MIB information (MIB OID 1.3.6.1.2.1.17.4.3.1.2 or 1.3.6.1.2.1.17.7.1.2.2.1.2)

Step 3

1. Click "Discover the Topology"

Compare the discovered topology with the actual topology. If necessary, edit connection list (menu - Service - Options - Discovery - View/edit connection list) and click again "Discover the Topology".

2. If you approve the new topology map then click "Apply the New Topology" to save the map.

The discovered topology is shown in the tab "Network Browser".

Discovery notices

The program display the switch port if can scan at least one MAC address on this port.

The program display the ping response time in millisecond (number to the right of each machine).

Routers are not shown on the map.

LanTopoLog treat the entire switch stack as single switch with single IP address.

The program may work incorrectly with some models of switches.

If there is more than one connection between two switches (PVST) then the program may not display these connections correctly. In this case, enable the option "Use manually edited connection list" (Options - tab Discovery) and add these connections to manually edited connection list. Example:

172.16.25.243 port 6 - 172.16.25.248 port 27

172.16.25.243 port 57 - 172.16.25.248 port 83

Algorithm used to discover network topology is not 100% reliable for mapping the entire network and some connections may remain undiscovered (labeled as xx).

There are some recommendations that may reduce number of unknown connections:

- increase the length of time the switch keeps dynamic MAC addresses in memory before discarding.
- run discovery process when the majority of computers are alive
- assign manually the root node on Step 2. The root node switch should be the switch with maximum traffic load
- the computer where you are running LanTopoLog should be connected as near as possible to the root node switch
- enable LLDP (CDP) on the switches
- use manually edited connection list (Options - tab Discovery)

The program display internal (SNMP) numbering of ports that may differ from port numbering on the switch front panel. See port description if there is a confusion between snmp port number and real port number.



Options - General

All options in this tab are obvious and are not described in detail.

Options - Discovery

Set these options to discover new computers and to resolve MAC addresses to IP addresses and hostnames.

If there is a router in your network then enter IP address of the router and router SNMP community string. You can enter a few IP addresses separated by commas. Router MAC-IP table is used to resolve the MAC addresses to IP addresses.

Schedule the discovery process. Also, you can run the discovery immediately (menu - Service - Run Computer Discovery Now).

If the discovery process is already running, then this menu item is inactive.

Set ip

LanTopoLog uses WMI queries to collect computer inventory information.

WMIquery use current user credentials.

However, you can specify alternate credentials when querying remote computers.

During the discovery process, the program retrieves the MAC address table from a switches via SNMP. If the MAC address of the computer absent from the table of the switch to which this computer is connected then the program cannot determine the proper location of that computer and move it to the "Pseudo device as temporary location".

There are some recommendations to avoid this problem:

- through the switch settings increase the length of time the switch keeps dynamic MAC addresses in memory before discarding.

- run the discovery process when the majority of computers are alive

It takes some time to move the most of computers to its proper place.

The program uses SNMP oid 1.3.6.1.2.1.17.4.3.1.2 and 1.3.6.1.2.1.17.7.1.2.2.1.2

to get bridge MAC address table. The most of switches support these oids.

If the switch doesn't support these oids then the program cannot locate devices connected to this switch.

During the discovery process, the program try to resolve a MAC address to an IP address and host name. If the program cannot resolve MAC addresses to hostname, then test the following:

1. Run command ping -a <IP>

2. Run command nbtstat -a <hostname>

where <IP> and <hostname> is the IP and name that you are trying to resolve.

Run these commands on the PC that runs LanTopolog.

On this option page you can manually set connections between switches. Use this option if some connections remain undiscovered (labeled as xx). Example:

192.168.0.1 port 12 - 192.168.0.2 port 50

The upper (in the tree) switch must be on the left side of the '-' character, the lower switch must be on the right side of the '-' character.

Options - Web

LanTopoLog cannot act as a web server.

In order to publish LanTopoLog web pages use any external web server.

Turn on option "Save network map as html in order to publish Web Pages" for continuously updating LanTopoLog web pages.

In the field 1 enter the path where LanTopoLog htm output files are to be saved. If LanTopoLog and Web server reside on different computers then enter in the field 1 the network path to the shared folder on computer which act as a web server (e.g., \\server\sharename).

In the field 2 enter the physical path corresponding to `http://<web address>/lantopolog` (e.g., `c:\inetpub\wwwroot\lantopolog`) on the machine with web server

In case when LanTopoLog and Web server reside on the same computer the following are typical values for Microsoft IIS Web Server:

1. `c:\inetpub\wwwroot\lantopolog`
 - the path where LanTopoLog htm output files are to be saved
2. `c:\inetpub\wwwroot\lantopolog`
 - the physical path corresponding to `http://<web address>/lantopolog`
3. `http://<web address>/lantopolog`
 - LanTopoLog HTTP address
4. `http://<web address>/scripts/ltsearch.cgi`
 - HTTP address for the ltsearch.cgi

In order to enable search function copy the file
"folder where LanTopolog is installed"\Script\ltsearch.cgi
into the Web server script directory.

Example for Apache web server:

1. `C:\Apache24\htdocs\lantopolog`
2. `C:\Apache24\htdocs\lantopolog`
3. `http://<web address>/lantopolog`
4. `http://<web address>/cgi-bin/ltsearch.cgi`

HTTP address for the LanTopoLog map: `http://<web address>/lantopolog/nettop.htm`

Options - Traffic

Switch-to-Switch traffic monitoring

Traffic chart shows last 60 minutes in real-time for easy monitoring of network.

Axis label value depends on the current port speed as follows below:


- if port speed is 10Mbps then label value is "1" or "2" (Mbyte/sec)
- if port speed is 100Mbps then label value is "8" or "16" (Mbyte/sec)
- if port speed is 1Gbps then label value is "40" or "80" (Mbyte/sec)
- if port speed is 10Gbps then label value is "400" (Mbyte/sec)

Alerts are sent when the average traffic load exceeds the configured thresholds during the preset time interval.

In the 1 hour graph 1 pixel represents 1 minute.

Monitoring iflnErrors, iflnDiscards counters

Alerts are sent when the percentage of invalid or dropped packets exceed the configured thresholds.



Options - Alarms

Alarm Notification

Choose the method of alarm notification (play sound, execute program/script, send mail).
In case Windows XP send mail module require .NET Framework 3.5 SP1 to be installed .

Send Mail Options

Define the mail settings for your SMTP server.

Options - Ping monitor

Ping options

Ping Monitor checks if hosts are up and notify when ping test fails.

Set time interval between two consecutive checks of a monitored object and number of ping attempts before marking a device as "down".

Edit list of monitored hosts and set notify options.

The program display the ping response time in millisecond (number to the right of each machine).

Indirectly determining hub or unmanaged switch failure

The program try determine hub or unmanaged switch failure using indirect method.

An alarm occurs if the majority of computers that stop responding during the short time are connected to the same hub or unmanaged switch.

Define the thresholds:

The percentage of computers that stop responding

The number of computers that stop responding

This function depend on option:

Time interval between two consecutive checks of a monitored object

To enable alarms do not set this interval more than 5 minutes.

Switches are not shown in the list of monitored hosts, but Ping Monitor check them, too.

In some cases it is desirable to stop notification for certain switches.

Add IP addresses for those switches into the list of monitored hosts and put a '-' character before the address (example: -192.168.0.1).

Notify when ping test fails (set notify options on the "Alarm" tab).

Import Export

IP, Hostname Import

If not all IPs and Hostnames get resolved automatically then use import from MAC-IP-Hostname file. To add computer IP addresses and Hostnames to the network topology map execute the import procedure (menu - File - Import - IP, Hostname Import).
MAC, IP and Hostname fields in the CSV file must be separated by a ';' character.

Custom Data Import

To add custom data to the network map execute the import procedure (menu - File - Import - Custom Data Import).
Use CSV files to import. Fields in the CSV file must be separated by a ';' character.
The CSV file must contain a column for the MAC address.
For each column you can set the width you want to see on the network map.
To hide certain columns from displaying set the column width of 0.

Export

To export switch connection table and computer list to csv files execute the export procedure (menu - File - Export - Export).

Import and Export procedures can be executed automatically according with schedule.

Demo limitations

The demo version has the following limitations:

- sometimes traffic charts are no longer displayed
- sometimes the right pane of the network browser becomes non resizable
- sometimes web publishing is disabled
- sometimes VLAN IDs are no longer displayed
- sometimes search function stop working
- sometimes display "demo" instead of real data

Demo version allows you to test all functionality of the program.

When you purchase LanTopoLog 2, you will receive a license key file that will convert the demo into the full version.

How to Get a License Key

When you purchase LanTopoLog 2, you will receive the license key file that will convert the demo into the full version.

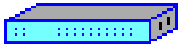
You need only one license for local network with up to 1000 managed switches.

Follow the instructions below.

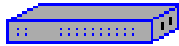
1. Discover your network with demo version of LanTopoLog 2 and save the discovered topology (click "Apply the New Topology").
Open the registration form (menu - Help - How to Get a License Key) .
Select from the list up to 3 switches using checkboxes.
Your license key file will be bound to these switches.
At least one of them must always be present in the LanTopoLog map (although may be temporarily turned off),
otherwise your copy of LanTopoLog 2 will be considered as unregistered.
If all 3 of these switches are replaced then you need to purchase the new license.
The switches with no learned mac addresses cannot be selected for the registration.
2. Network ID string will appear in the field below.
Send Network ID string via email to the sales@lantopolog.com
(copy the string and paste into the email)
3. Purchase LanTopoLog 2 through the program site www.lantopolog.com
Avoid buying from any company not listed in www.lantopolog.com
4. After you have made payment, your license key file will be emailed to you.
Copy the license key file to the folder that is opened when clicking "this folder" link on the registration form and restart the program.

Note: The license key is bound to the MAC address of the switch, so you may change any switch settings (IP address, Name, etc) - the license remains valid.
In the future you can add new switches to your network, however, your license remains valid.

Icon reference



Switch, the ping is successful.



Switch, the ping is unsuccessful.



Socket



Hub, unmanaged switch, wireless access point, ...
The program displays this icon if there are two or more devices on the same switch port.



End device (computer, printer, mobile device), the ping is successful.



End device, the ping is unsuccessful.



End device, WMI data collected.



Tools



Alarm icon. Ping Monitor displays the red icon when ping test fails.
See the log for details.



Alarm icon. Traffic monitor displays the yellow icon when traffic load exceeded the configured threshold. See the log for details.