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LanTopoLog 2 License Agreement

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LICENSE

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 to the switches that you select during the registration process.
You can select up to three switches for licensing.

At least one of them must always be present on the LanTopoLog map, otherwise, your copy of LanTopoLog is not considered registered.

License key is not renewable, that is, if all 3 of these switches are replaced, then you will need to purchase a new license.

You need only one license for local network with up to 10000 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.

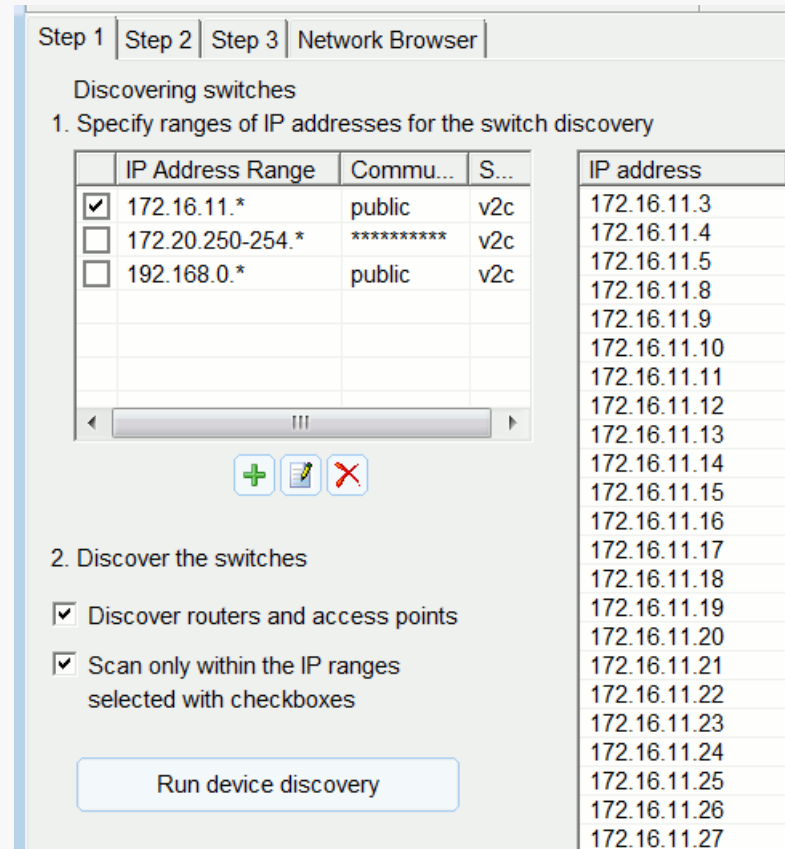
If you do not agree with the terms of this license you must cease to use the product.

Note: There is no a special Technician License of LanTopoLog that would be valid in different networks.

Discovery steps

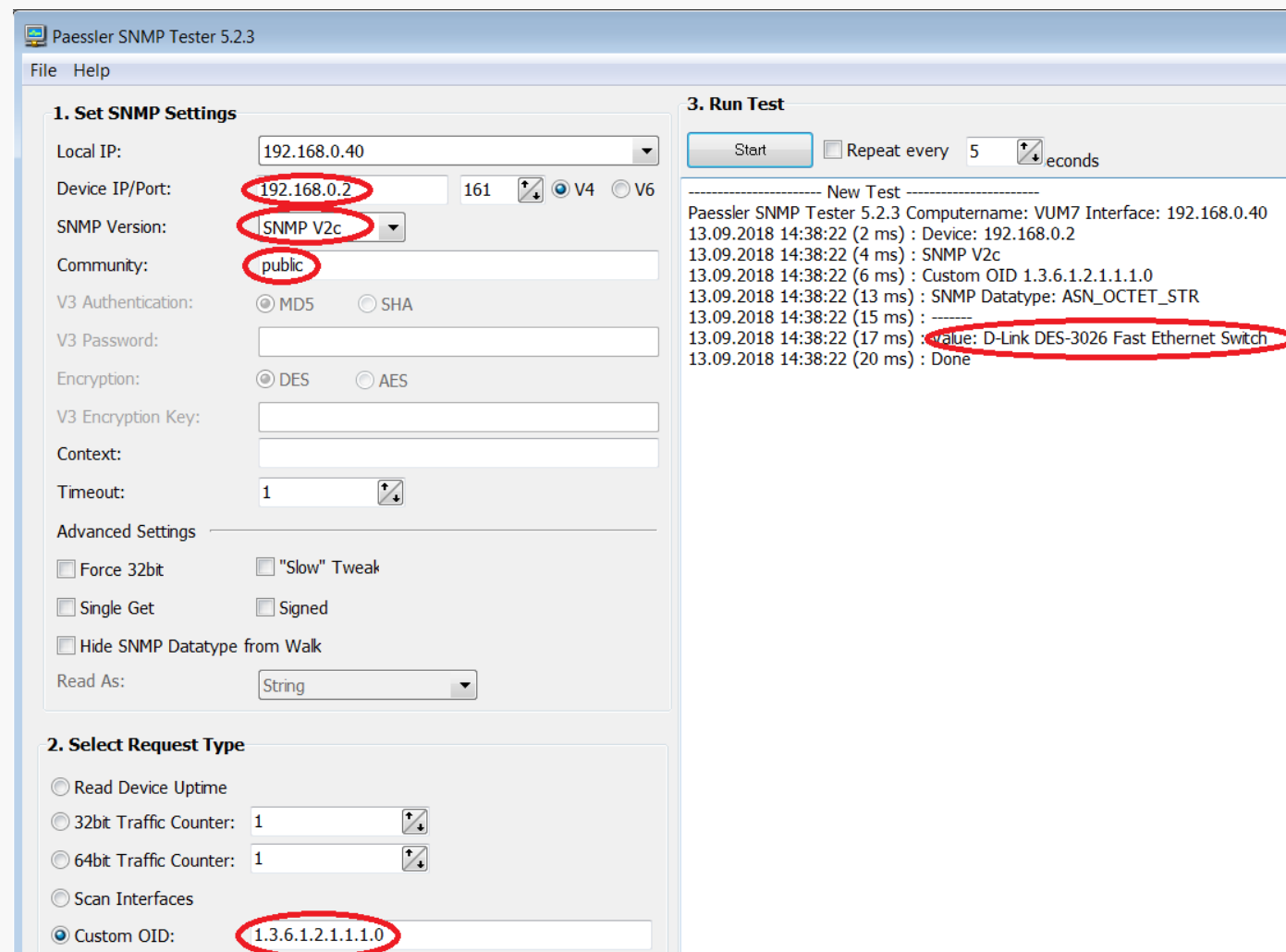
To perform the network topology discovery follow the instructions in the tabs "Step 1", "Step 2", "Step 3".

Step 1



1. Specify the ranges of the IP addresses for switch discovery.
For example: 192.168.0.* 192.168.0.100-200 172.16.200-255.*
Set SNMP access parameters for each range ("read community string" or user/password in case of SNMPv3)

2. Discover the switches
Click "Run device discovery"
Discovered switches will be added to the list of SNMP devices (see table right).
Turn on the option "Discover routers and access points" to discover any device that support SNMP.
If some of your switches are not discovered then test SNMP access to these switches with any other SNMP utility.
For example <https://www.paessler.com/tools/snmp tester> (see screenshot)



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

Step 2

1. Click "Collect SNMP data"
Wait until the process is finished.
In case of SNMPv3:
Cisco switches are not typically configured for reading of all the Bridge-MIB information on a per-VLAN basis when using SNMPv3.
In this case you need to configure an SNMPv3 context as described here:
<http://www.switchportmapper.com/support-mapping-a-cisco-switch-using-snmpv3.htm>

Step 3

1. Click "Discover the Topology"
Compare the discovered topology with the actual topology.
If necessary use your own connection list to correct the discovered topology.

(Options - Discovery - Edit connection table)

Edit connection table and click "Discover the Topology" again.

2. Click "Apply the New Topology" to save the new topology map.

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

Subsequently, sometimes it becomes necessary to make changes to the network diagram.

With a small change in topology, it is not necessary to repeat the polling cycle of all switches, which can take a long time in a large network.

For example, you can quickly add a new switch to the map.

To do this add a new switch to the table at the step 1

Then find on the map the switch to which this new switch is connected, and in its tools menu select the item

"Discover only the part of the map under this switch"

If you do not know where the new switch is connected, then select any switch on the map, preferably the last one in the branch and select this menu item. In this case, you can move the new switch to the desired location using the topology editor, or it will happen automatically at the next complete rebuilding of the map (steps 2,3).

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The program treats the entire switch stack as a single switch with a single IP address.

The 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 the number of unknown connections:

- 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
- try to assign another switch as a root node in the map tree by checking its box on the Step 2.
- 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 your own connection list to correct the discovered topology (Options - Discovery - Edit connection table).

The program displays internal (SNMP) numbering of ports that may differ from port numbering on the switch front panel. If there is a confusion between snmp port number and real port number, you can use the option "Display ifName instead of port number" (Options - General - ...)

Also see port description in the right pane of the network browser.

Some data interpretation:

Date	MAC	IP	Hostname	Domain	Ping Time
09:03	A8B1D43EE1C0	192.168.0.8	c2960		0
FastEthernet0/1					
03Mar	00E070616356	192.168.0.45		DH TECHNOLOGY	
23:13y	001D6065BE35	192.168.0.100	VUMH1	WORKGROUP	ASUSTek COMPUTER INC.
25Feb	40000B0080EE				
25Feb	40000B008A15				
09:03	CC5D4E4BB59E	192.168.0.1	KEENETIC		Zyxel Communications Corporati 0
09:03	F079596C9E81	192.168.0.40	VUM7	WORKGROUP	ASUSTek COMPUTER INC. vum7\vum 0

03Mar - date of last successful ping.

25Feb - if IP address is not resolved then it is SNMP-based discovery date.

09:03 - time of last successful ping (today).

23:13y - time of last successful ping (yesterday).

The program updates IP addresses and hostnames every N hour(s)

N is set in options (Options - Discovery - Run computer discovery every N hour(s)).

Domain (WORKGROUP) and login name (vum7\vum) can be determined by WMI or can be imported from [Advanced IP Scanner](#) scan result file

The manufacturer (ASUSTek..., Zyxel...) is determined by MAC address.

The rightmost digit (0) is ping response time in millisecond.

Options - General

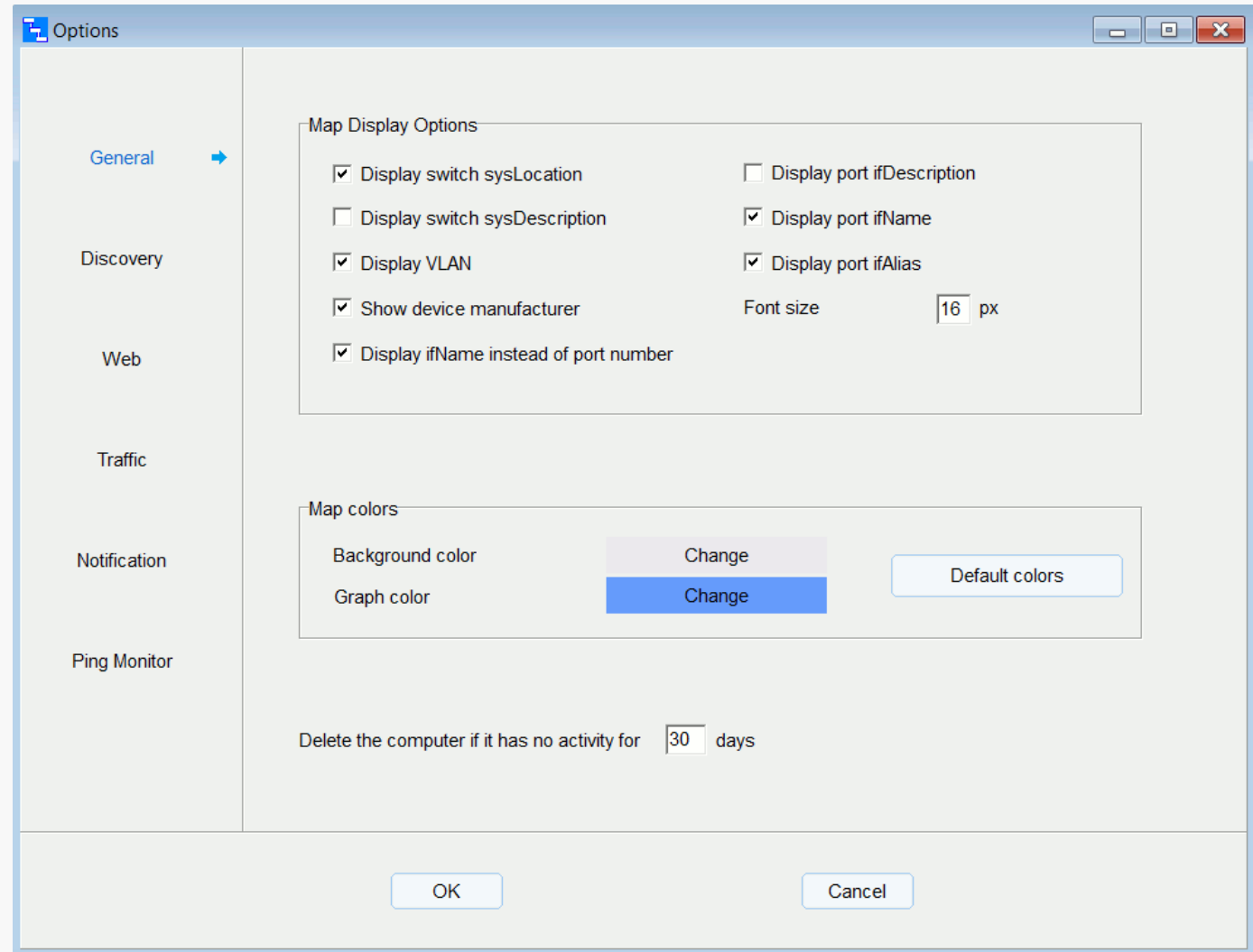
Map Display Options

You can turn on the following options:

- Display switch sysLocation
- Display port ifDescription
- Show device manufacturer
- Display switch sysDescription
- Display VLAN
- Display port ifName
- Display port ifAlias
- Font size
- Display ifName instead of port number

Map colors:

- Background color
- Graph color



Options - Discovery

Set these options to discover new computers and other end devices.

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

Turn on option "Enable WMI inventory" to collect WMI data from the remote computers. WMI queries use current user credentials. However, you can specify alternate credentials when querying remote computers. In addition to predefined WMI queries you can add your own WMI queries.

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

During the discovery process, the program tries to resolve a MAC address to an IP address and host name. It can take a few hours until the resolving cycle is finished.

On this option page you can manually set connections between switches ("Edit connection table" button). Use this option if some connections discovered incorrectly or remain undiscovered (labeled as xx). For example in this table:

```
192.168.0.1 port 12 - 192.168.0.2 port 50
192.168.0.3 port ge-1/0/2 - 192.168.0.4 port Gi1/0/10
```

The switch located higher in the tree must be on the left side of the '-' character, the switch located lower in the tree must be on the right side of the '-' character.

This option also allows you to add non-SNMP device to the main map. In the example above the device 192.168.0.2 may not support SNMP.

When you edit the topology diagram (Menu - Service - Edit the Topology) then new connections are automatically added to this table.

If you turn on the option "Notify when the Spanning Tree Topology is changed" then administrator will be notified when STP topology changed.

Options - Web

LanTopoLog cannot act as a Web server.
To publish the map LanTopoLog uses any external Web server.

Options

You can use any Web server to share the map with others.

Save map files to the web folder

Save as htm Save as php

General

Discovery

1. Enter the path where htm/php files are to be saved
May be network path (e.g., \\server\sharename)

C:\Apache24\htdocs\ltdl

2. Local path to the LanTopoLog Web folder on the Web server machine.
Enter the same path as above if LanTopoLog and Web server reside on the same machine.

C:\Apache24\htdocs\ltdl

3. Enter LanTopoLog folder web address (e.g., http://<web server name>/ltdl)

http://localhost/ltdl Test the URL

4. Copy the file ltdsearch.cgi into the Web server script directory
and enter the HTTP address for the ltdsearch.cgi

http://localhost/cgi-bin/ltdsearch.cgi Test CGI

HTTP address for the LanTopoLog map: http://<web server name>/ltdl/nettop.htm(php)

OK Cancel

Turn on option "Save map files to the web folder" for continuously updating LanTopoLog web pages and select file extension (htm or php).

In the field 1 enter the path where LanTopoLog htm/php files are to be saved.
May be network path (e.g., \\server\sharename)

In the field 2 enter the local path corresponding to LanTopoLog folder web address on the Web server machine. If LanTopoLog and Web server reside on the same machine then enter the same path as in the field 1.

In the field 3 enter LanTopoLog folder web address. For example http://<web_server_name>/ltdl

In the field 4 enter HTTP address for the ltdsearch.cgi
In order to enable search function, you need to configure CGI support on your Web server. For more info see your Web server documentation.
Copy the file ltdsearch.cgi into the directory designated for CGI-scripts on your Web server. For Linux Web Server the ltdsearch.cgi file is located here: ... \Script\Linux\ltdsearch.cgi

The following are typical values for Apache Web Server:

1. C:\Apache24\htdocs\ltdl
2. C:\Apache24\htdocs\ltdl
3. http://<web_server_name>/ltdl
4. http://<web_server_name>/cgi-bin/ltdsearch.cgi

The following are typical values for Microsoft IIS Web Server:

1. c:\inetpub\wwwroot\ltdl
2. c:\inetpub\wwwroot\ltdl
3. http://<web_server_name>/ltdl
4. http://<web_server_name>/scripts/ltdsearch.cgi

The following are typical values for Linux Web Server:

1. \\linux_machine\share_name_for_ltdl
2. /var/www/html/ltdl
3. http://<web_server_name>/ltdl
4. http://<web_server_name>/cgi-bin/ltdsearch.cgi

The HTTP address for the LanTopoLog map: http://<web_server_name>/ltdl/nettop.htm(php)

You can restrict access to LanTopoLog webpages using PHP. For this you need to add custom php code to LanTopoLog php files. See the file ..\LanTopoLog2\Import\rename_add_php.txt for further instructions.

Options - Traffic

Options

Enable Traffic Monitor

Traffic (Bandwidth) Monitor

Notify when the threshold is exceeded:

Average bandwidth usage threshold %

Calculate the average bandwidth usage for the last minutes

Packet error monitoring

Notify when the threshold is exceeded:

The number of packets error exceeds % of total number of packets

The number of discarded packets exceeds % of total number of packets

OK Cancel

Traffic (Bandwidth) Monitor

Traffic diagrams show the bandwidth usage of each port in the last hour.

Y-axis scale value is port speed:

100M match 100Mbps

1G match 1Gbps

and so on

If the total incoming and outgoing traffic on the port exceeds this value, then the scale may be changed to 200M, 2G, and so on.

Set the threshold for the bandwidth usage value and the time interval during which this value is averaged. If the average value exceeds the specified threshold, then it will be recorded in the LanTopoLog event log, and if "Notify when the threshold is exceeded" option is enabled, this will notify the Administrators.

Packet error monitoring

Monitoring ifInErrors, ifInDiscards, ifOutErrors, ifOutDiscards counters.

The alerts are sent when the percentage of invalid or dropped packets exceeds the specified thresholds.

Options - Notification
Alarm Notification

Choose the method of alarm notification (Play sound, Execute program/script, Send email).

Option "Execute program/script" allows to send snmp trap with external utility.
For example you can use snmpTrapGen utility from <https://ezfive.com/snmpsoft-tools/>
Enable "Execute program/script" and enter the string:
c:\tools\snmpTrapGen.exe -r:192.168.0.35 -to:.1.3.6.1.2.1.1.4.0 -vid:1 -vtp:str -val:<text>
where 192.168.0.35 - trap receiver
The program will replace <text> with notification text.

Also you can send notification via Telegram with powershell script.

For this enter the command
powershell.exe -file notify.ps1 <text>
The program will replace <text> with notification text
Create a Telegram bot in order to get an Access Token
notify.ps1 file must contain the 3 lines:

```
$tokenId = "Your_Telegram_Token"
$chatID = "Your_Telegram_Chat_ID"
curl "https://api.telegram.org/bot$tokenId/sendMessage?chat_id=$chatID&parse_mode=Markdown&text=$args[0]"
```

Email Options

You can specify more than one email address.
Define the settings of your SMTP server for the alarm notification via email.
This feature requires .NET Framework Version 4.6.2 or later.

Sound notification in web page

If you monitor your network via Web browser you can also receive alarm sound notification from LanTopoLog. For this in the LanTopoLog Web Options window select option "Save as php".
Also cookies and autoplay audio must be enabled in your Web browser.

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Options - Ping monitor

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

The screenshot shows a dialog box titled "Options" with a sidebar on the left containing the following tabs: General, Discovery, Web, Traffic, Notification, and Ping Monitor (which is highlighted with a blue arrow). The main content area of the dialog is divided into sections corresponding to these tabs. The "Ping Monitor" section is active and contains the following elements:

- A button labeled "List of monitored hosts".
- A label "Time interval between two consecutive checks of a monitored object" followed by a text input field containing the number "3" and the unit "minutes".
- A label "Number of ping attempts before marking a device as 'down'" followed by a text input field containing the number "2".
- A label "Ping Timeout" followed by a spin box containing the number "1000" and the unit "ms".
- A checked checkbox labeled "Notify when ping fails".

At the bottom of the dialog, there are two buttons: "OK" and "Cancel".

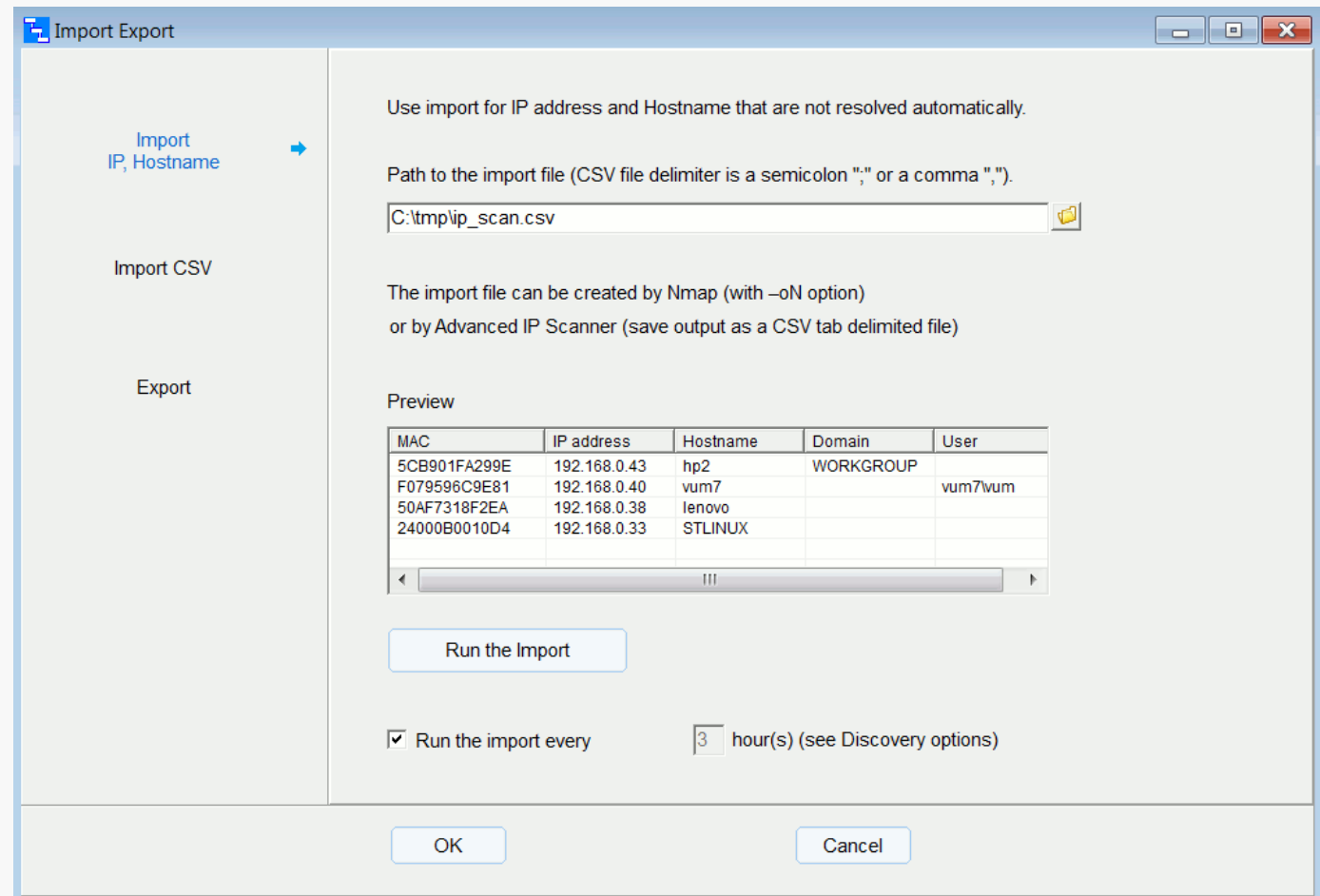
Click "List of monitored hosts" button to edit the list of monitored hosts.
Set time interval between two consecutive checks of a monitored object
and number of ping attempts before marking a device as "down".

If necessary turn on the option "Notify when the ping fails"
Set notify options on the "Notification" tab.

The switches are not shown in the list of monitored hosts,
but Ping Monitor checks 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).

Import Export

IP, Hostname Import



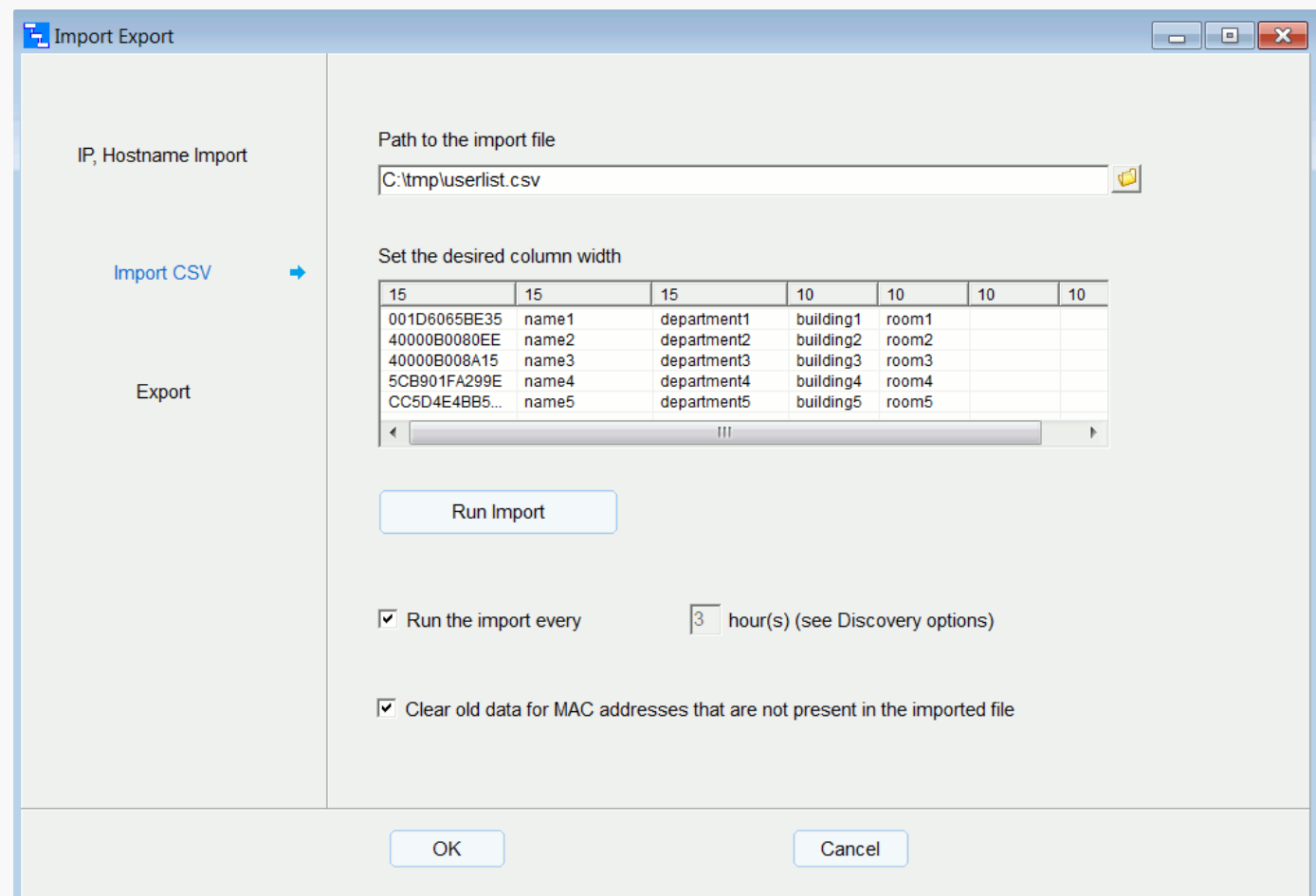
If not all IPs and Hostnames get resolved automatically then use the import from MAC-IP-Hostname file. To add computer IP addresses and Hostnames to the network topology map perform the import procedure (menu - File - Import - IP, Hostname Import). The data fields must be separated by the field delimiter (";" or ",").

The file should be ANSI. CSV file line example:

F07BCB410B9F;192.168.0.39;hostname
 F0-7B-CB-41-0B-9F;192.168.0.39;hostname
 F0:7B:CB:41:0B:9F;192.168.0.39;hostname

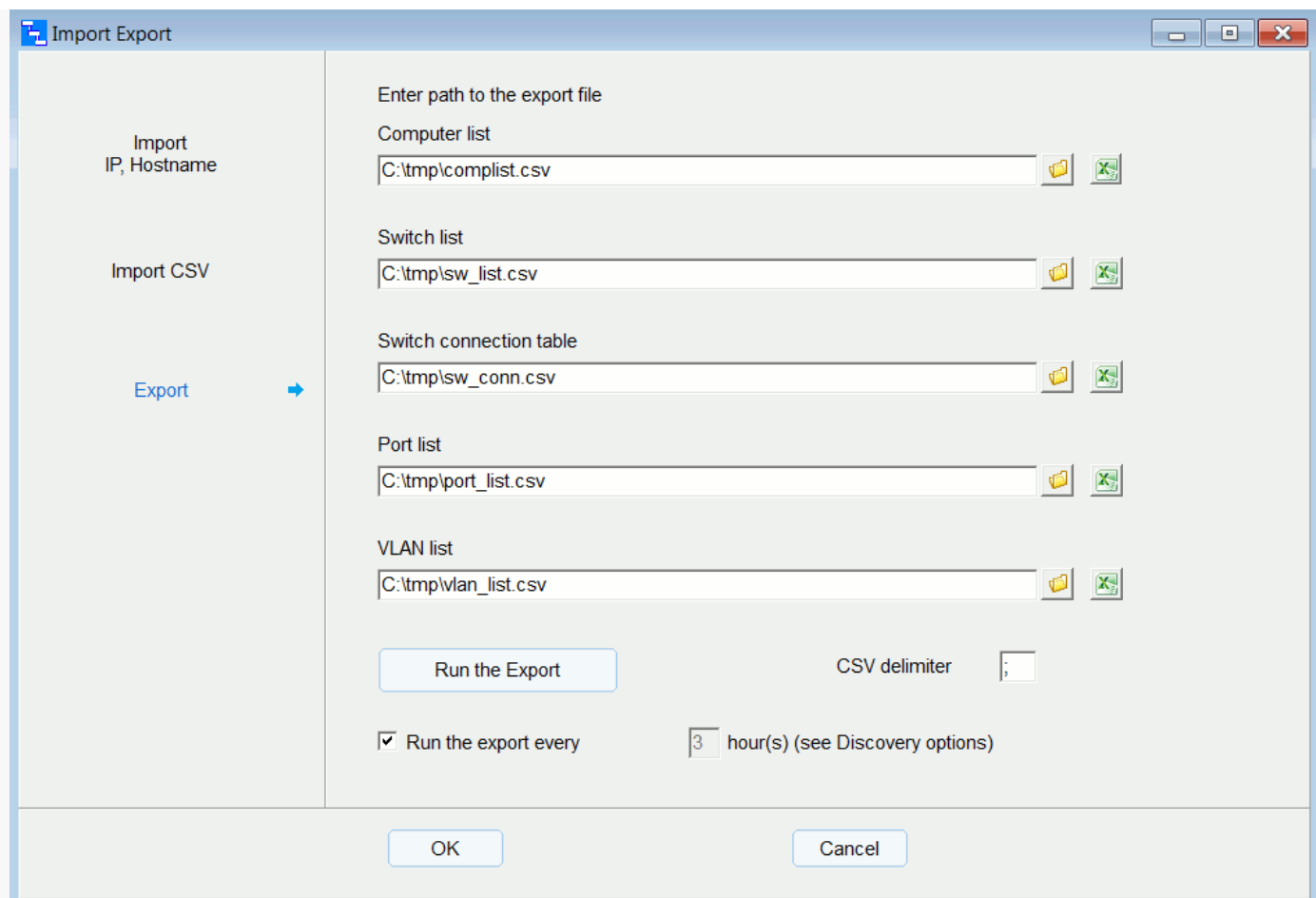
The import file can be created with [Nmap](#) (use the -oN option to save the Nmap scan result) or with [Advanced IP Scanner](#) (save the scan result as a CSV tab delimited file). The domain (workgroup) and username also can be imported from Advanced IP Scanner scan result file.

Custom data Import



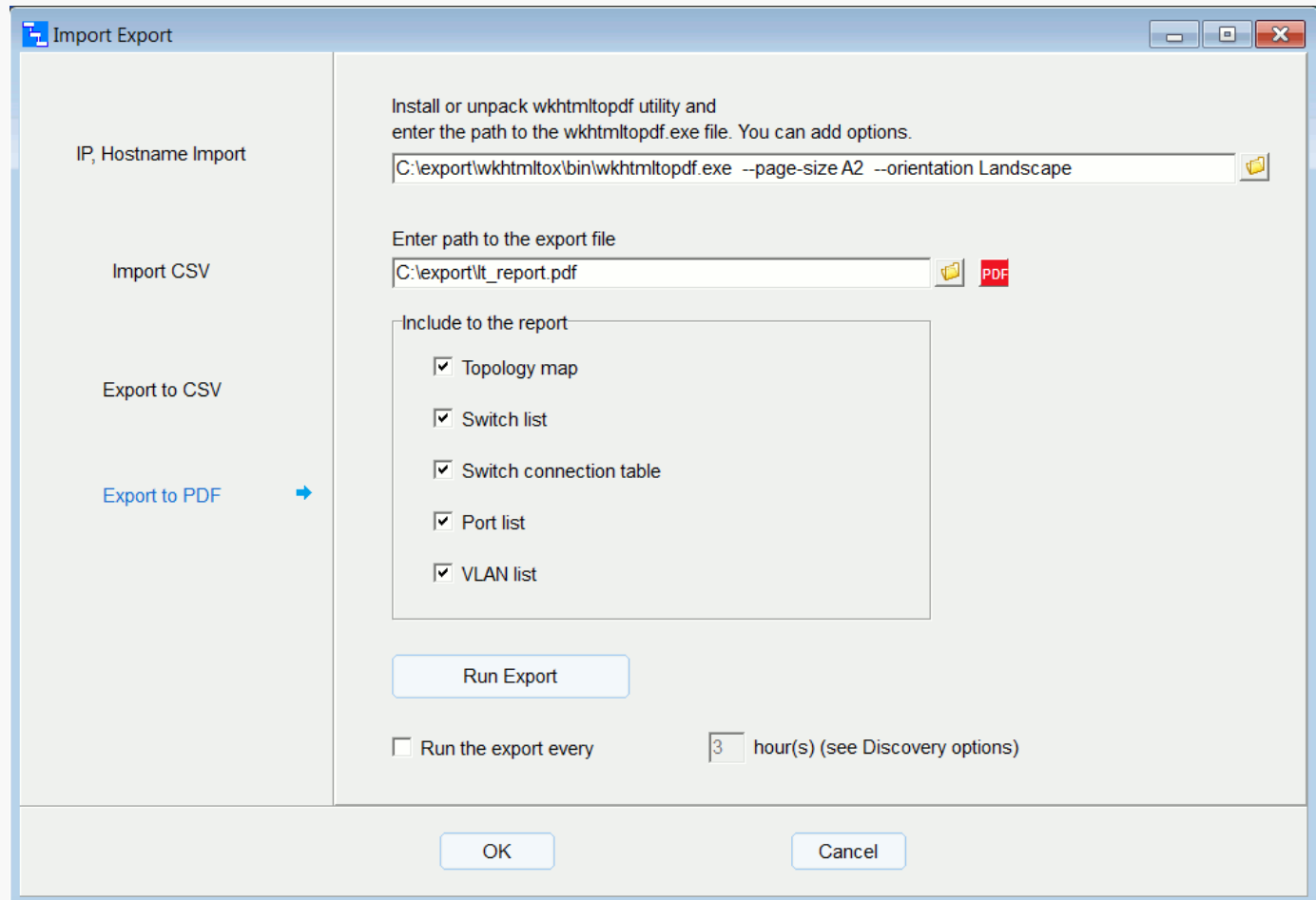
To add custom data to the network map perform the import procedure (menu - File - Import - Import CSV). CSV file must contain a column mapped to the MAC address. For each column you can set the width you want to see on the network map. To hide certain columns from displaying set the column width of 0.

Export to CSV



The program can export computer list, switch list, switch connection table, port list, VLAN list to CSV file (menu - File - Export - Export). Here you can set CSV delimiter (";" or ",").

Export to PDF



Install or unpack [wkhtmltopdf](#) utility and enter the path to the wkhtmltopdf.exe file. You can add options. For example, set page size: --page-size A2
Full option list [is here](#)

The Import and Export procedures can be performed automatically according with the schedule.

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Demo limitations

The unregistered version has the following limitations:

Some time after the program starts:

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

The unregistered 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 a license key file that will convert the demo into the full version. You need only one license for local network with up to 10000 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 on the LanTopoLog map (although may be temporarily turned off), otherwise your copy of LanTopoLog 2 is not considered registered. If all 3 of these switches will be replaced then you will need to purchase a new license.

2. Switch ID string will appear in the field below. Send Switch 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

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 shown on the registration form and restart the program.

In case of installable version place the file here:

C:\Users\\AppData\Local\LanTopoLog2\lantopolog.lic

In case of portable version place the file here:

..\folder where you unzip the downloaded file\Lantopolog2xx\LanTopoLog2\lantopolog.lic

Since version 2.46 you can place the license key file here:

...\LanTopoLog2\Lic_key\lantopolog.lic

Notes:

The license key is bound to the MAC address of the switch, so you can change any switch settings (IP address, Name, etc) - the license key remains valid.

Practically the license key is valid for 4-5 years (switch life cycle) and the license price takes this into account.

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Updating the program

All updates are free.

Installable version:

Stop the program (if it is running) and install the new version.

The new version will keep the data and settings of the previous one.

Portable version:

Unzip the new version zip file to any directory.

If you'd like to keep the old data, move the old data files to the new location (see below).

Moving the data

Installable version:

LanTopoLog data files are located in

C:\Users\user\AppData\Local\LanTopoLog2\

Portable version:

LanTopoLog data files are located in

..\folder where you unzip the downloaded file\Lantopolog2xx\LanTopoLog2\

The folder ..\LanTopoLog2\ is created after the first run of the program.

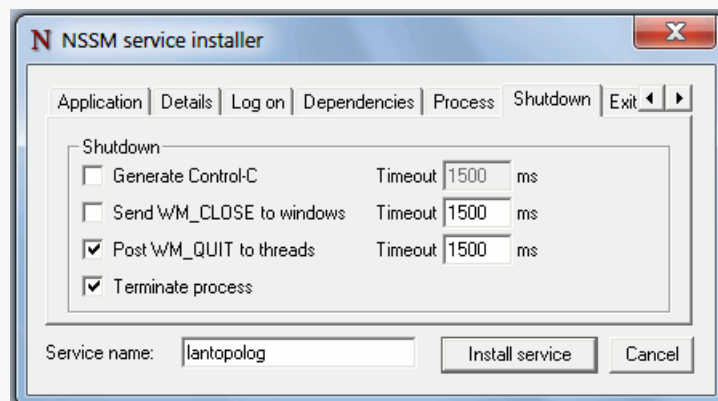
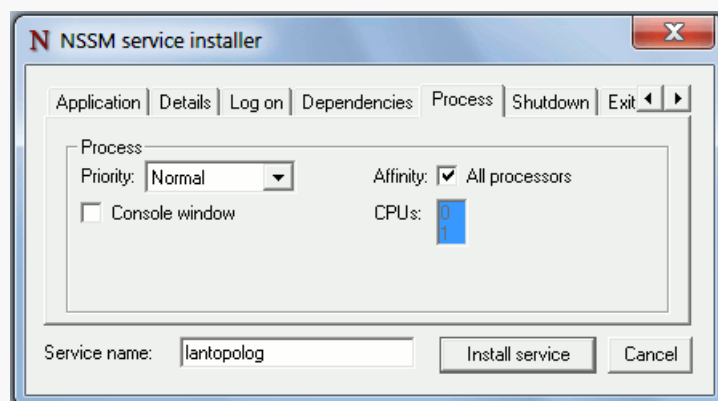
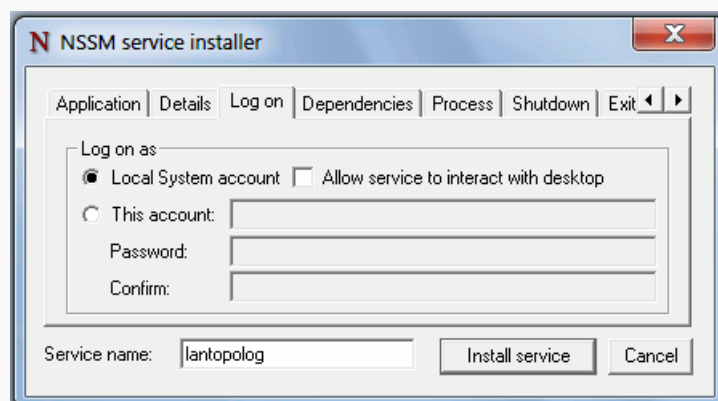
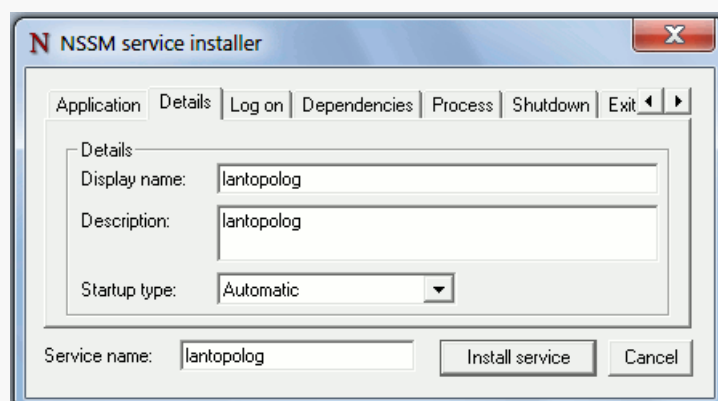
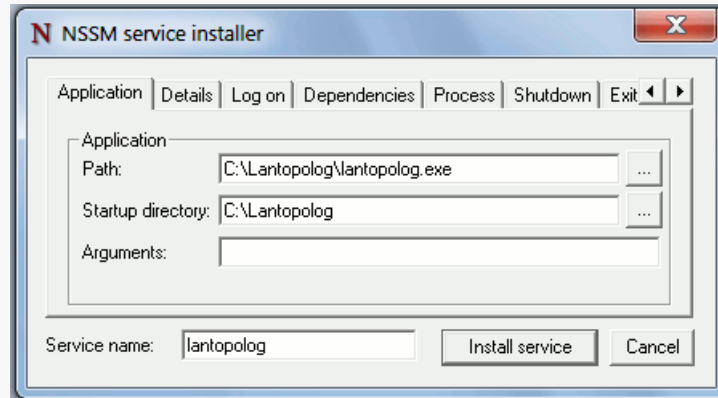
If you wish to keep the data and settings, replace the new folder ..\LanTopoLog2\
with the old one.

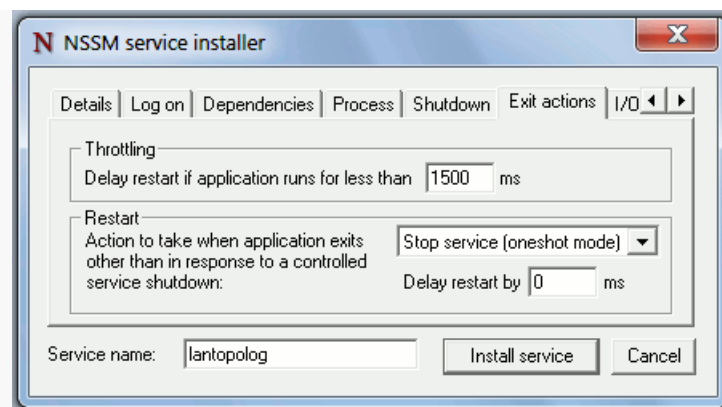
LanTopoLog as service

Download LanTopoLog service manager and unzip it to any folder.
LanTopoLog service manager is a wrapper to run LanTopoLog as service using NSSM
NSSM is a service helper program similar to srvcy.
It can start any application as an NT service.

Follow the instruction to install LanTopoLog as service.

1. Download the latest [portable](#) version of LanTopoLog and unzip it to any folder (for example c:\Lantopolog). Run LanTopoLog, discover your network and set all options. LanTopoLog service will use these options. Close LanTopoLog.
2. Run LanTopoLog service manager (run the file ltl_svc_mgr.exe **as administrator**).
3. Click "Install Service" button. Configure the service and click "Install service" button in the NSSM installer window. The screenshots below will help you.





Note:

The name of service must be: "lantopolog" Do not change this name.
Local System is a high-privileged built-in account.
You can create a user with minimum rights to run lantopolog service.

Now you can start service, stop service, edit service.

LanTopoLog service and GUI version of LanTopoLog cannot be running simultaneously.

To update network map or change options:

- stop LanTopoLog service
- run GUI version of LanTopoLog (c:\Lantopolog\lantopolog.exe)
- perform necessary tasks (update switch list and topology, change options, run export)
- stop GUI version of LanTopoLog.
- run LanTopoLog service.

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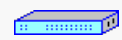
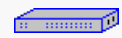














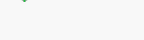
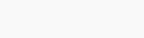
How to Get a License Key

Updating the program.
Moving the data.

LanTopoLog as service

Icon legend

Icon legend

-  Switch, the ping is successful.
-  Switch, the ping is unsuccessful.
-  An access point or other device that supports SNMP, the ping is successful.
-  An access point or other device that supports SNMP, the ping is unsuccessful.
-  Socket
-  Hub, unmanaged switch, wireless access point, ... The program displays this icon if two or more MACs are detected on the switch port.
-  End device (computer, printer, mobile device), the ping is successful.
-  End device, the ping is unsuccessful.
-  Printer, the ping is successful.
-  Printer, the ping is unsuccessful.
-  Mark the device that is monitored via ICMP ping.
-  Tools
-  Alarm icon. Ping Monitor displays the red icon when a switch stops responding to ping. See the log for details.
-  Alarm icon. Traffic monitor displays the yellow icon when traffic load exceeded the configured threshold. Also, Ping Monitor displays this icon when a monitored host stops responding to ping. See the log for details.
-  The switch or monitored host resume responding to ping.
-  Icon for the new MAC address. To remove the icon, click "View New" button, then "Remove Mark" button.
-  Bar chart of traffic load for the last 60 minutes. Y-axis scale value is 100M (100 Mbit/sec). In the 1 hour chart each X-axis pixel represents 1 minute. The dashed line shows the port bandwidth usage threshold specified in Options (Options - Traffic). The arrow to the right means that the outgoing traffic on the port prevails over the inbound traffic (calculated as the average for the time interval specified in the traffic options).
-  Bar chart of traffic load for the last 24 hours. Each X-axis pixel represents 10 minutes. Top line shows peak values for 10 minutes periods.