

# **PPPoE Monitor**

User Manual

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# 1 Program Overview

PPPoE Monitor is designed to monitor PPPoE access concentrators within a network broadcast domain. The program relies on its own implementation of the PPPoE Discovery protocol, which is compliant with RFC-2516.

The program can send requests, receive and calculate responses, measure the round-trip time (RTT), record MAC addresses and create RTT diagrams for each concentrator.

Key features:

- monitor available PPPoE concentrators continuously;
- calculate requests / responses and lost packets (unanswered requests);
- create diagrams of response time for each concentrator;
- get alerts on the status of concentrators (available / not available);
- record changes of the concentrator status to a log file;
- record a general log file and detailed log files on every concentrator;
- control and get sound alerts about the availability of the network interface (network cable is plugged / unplugged);
- control and get sound alerts about the availability of new concentrators;
- create PPPoE connections to a specific concentrator.

Main areas of monitor use:

- get a list of available concentrators;
- create PPPoE connections with optimized settings quickly;
- analyze response time, load on a communication channel / concentrator;
- discover illegal concentrators (for example, those connected by unauthorized users to capture passwords);
- analyze the use of PPPoE service by other nodes (within your broadcast domain);
- control the integrity of the line to a concentrator;

– and more.

PPPoE Monitor is designed for ordinary users of PPPoE services and professional users from organizations that provide PPPoE services (for example, ISP technical support, network administrators and others).

## 2 System Requirements

PPPoE Monitor runs on Microsoft Windows 2000/XP/2003/Vista/7. The minimal hardware configuration required by the program is as follows:

- Microsoft Windows 2000 (Service Pack 4) or higher;
- WinPcap 4.0 Stable or higher (<http://www.winpcap.org>);
- 533 MHz CPU or higher;
- 128 Mb RAM;
- 2 Mb free hard disk space;
- Network adapter to connect to LAN.

### 3 Installing the Program

The program is distributed as a single installation file. To install PPPoE Monitor, run the *pppoem-setup.exe*. Follow the installation directions.

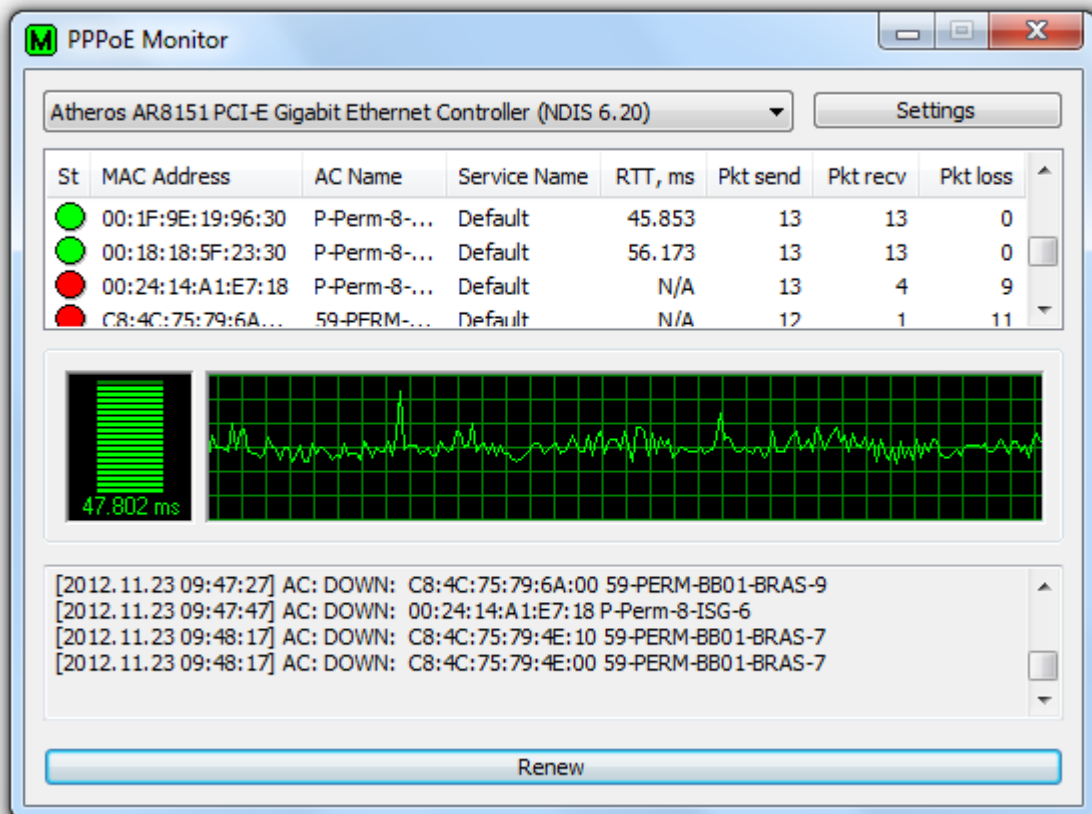
## 4 Using the Program

### 4.1 Main Program Window

Once the program is launched, select the required Ethernet interface from the drop-down list and, if necessary, configure time parameters and alerts (see more information on the program settings in the chapter "Program Settings").

You can see the main window in Picture 1. This window is divided into three areas:

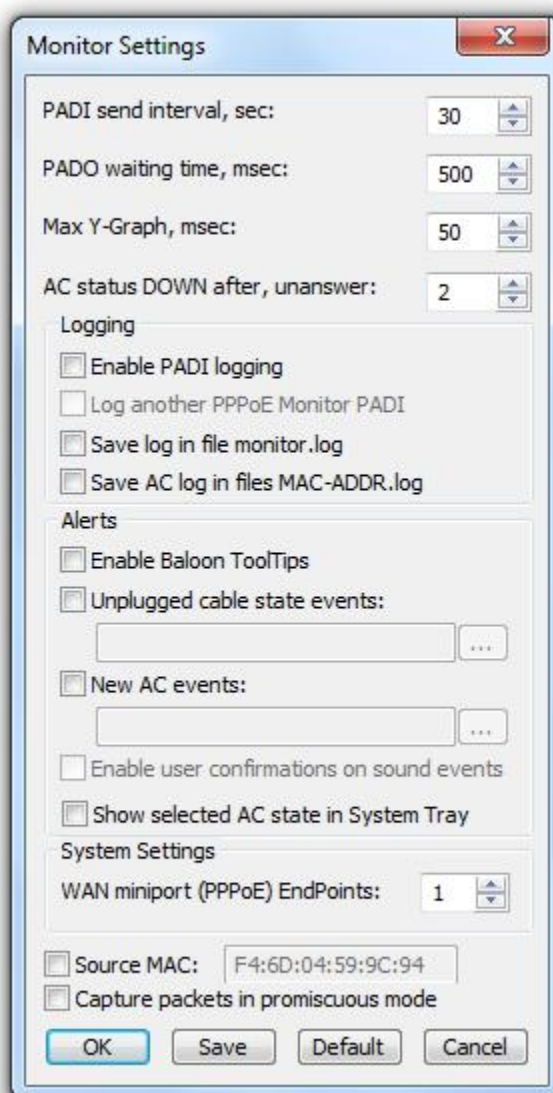
- The top area lists available PPPoE concentrators and their parameters such as MAC address, concentrator name, service name, round-trip time (RTT), number of sent packets (Pkt send), number of received packets (Pkt rcv), number of requests without response or lost packets (Pkt loss);
- The central area displays the RTT diagram for a selected concentrator;
- The bottom area shows the event log.



Pic. 1 Main program window

## 4.2 Program Settings

The settings of the program are available on the Monitor Settings dialog. To open the dialog, click the *Settings* button located on the main program window. The Monitor Settings dialog is shown in Picture 2.



Pic. 2 Program settings window

**PADI send interval, sec** – interval for sending requests to concentrators, ranging from 1 to 3600 seconds. By default the parameter is set to 30 seconds.



**PADO waiting time, msec** – time to wait for a response from concentrators, ranging from 100 to 1000 milliseconds. By default the parameter is set to 500 milliseconds.

**Max Y-Graph, msec** – maximal value of concentrator response time (Y-axis) for creating diagrams, from 1 to 1000 milliseconds. The default value is 50 milliseconds.

**AC status DOWN after, unanswer** – number of unanswered requests until a concentrator is assigned the DOWN status (unavailable).

**Enable PADI logging** – enables logging of all attempts to connect to concentrators from other nodes of the broadcast domain.

**Log another PPPoE Monitor PADI** – enables logging of requests from other PPPoE monitors in the broadcast domain.

**Save log in file monitor.log** – enables recording a general log file.

**Save AC log in files MAC-ADDR.log** – enables recording detailed log files for every concentrator. Log files are saved to the program directory.

**Enable Balloon ToolTips** – enables tooltip alerts about events.

**Unplugged cable state event** – enables sound alerts when a network cable is unplugged (Ethernet).

**New AC event** – enables sound alerts when a new concentrator is discovered.

**Enable user confirmations on sound events** – When an event occurs, the sound alert will not stop until the user minimizes / opens the window, or clicks the *Renew* button.

**Show selected AC state in System Tray** – shows the status of a selected concentrator in the tray. Otherwise, the overall status of concentrators is shown.

**WAN miniport (PPPoE) EndPoints** – sets the maximal allowed number of

simultaneous PPPoE connections. This parameter changes the RRAS system settings for PPPoE connections. The default number of connections is 1. When this parameter is changed, the user needs to restart the computer.

**Source MAC** – sets the source MAC address specified in requests to a concentrator.

**Capture packets in promiscuous mode** – enables the promiscuous mode (disables the filter for the own MAC address in the network adapter).

## 4.3 Creating PPPoE Connections

By right-clicking a record in the list of concentrators, you can open the context menu. The context menu contains the following items:

*Connections* – lists established connections on the selected concentrator;

*Create connection* – establishes a connection on the selected concentrator;

*Remove from list* – deletes the selected concentrator from the list.

To create a connection, select the necessary concentrator in the list, open the context menu and select “Create connection”. Enter the name of a new connection and click OK.

PPPoE Monitor establishes a standard Windows network connection that you can access by selecting “Control panel > Network connections”. The program sets the following settings for the connection:

- specifies a connected concentrator (AC name);
- disables all authentication protocols except Chap;
- disables "Client for Microsoft Networks" and "File and Printer Sharing for Microsoft Networks"

## 4.4 Recommendations

It is not recommended to set the **PADI send interval** value to be too low because if there are too many requests, the concentrator can block a MAC address of a client (in order to protect from DOS attacks).

The **PADO waiting time** value must not be less than the maximal round-trip time (RTT). Otherwise, the program considers that there is no response from a concentrator. Recommended value is  $RTT * 100$  msec.

If L2 firewalls are used, it is necessary to allow PPPoE protocol 0x8863.