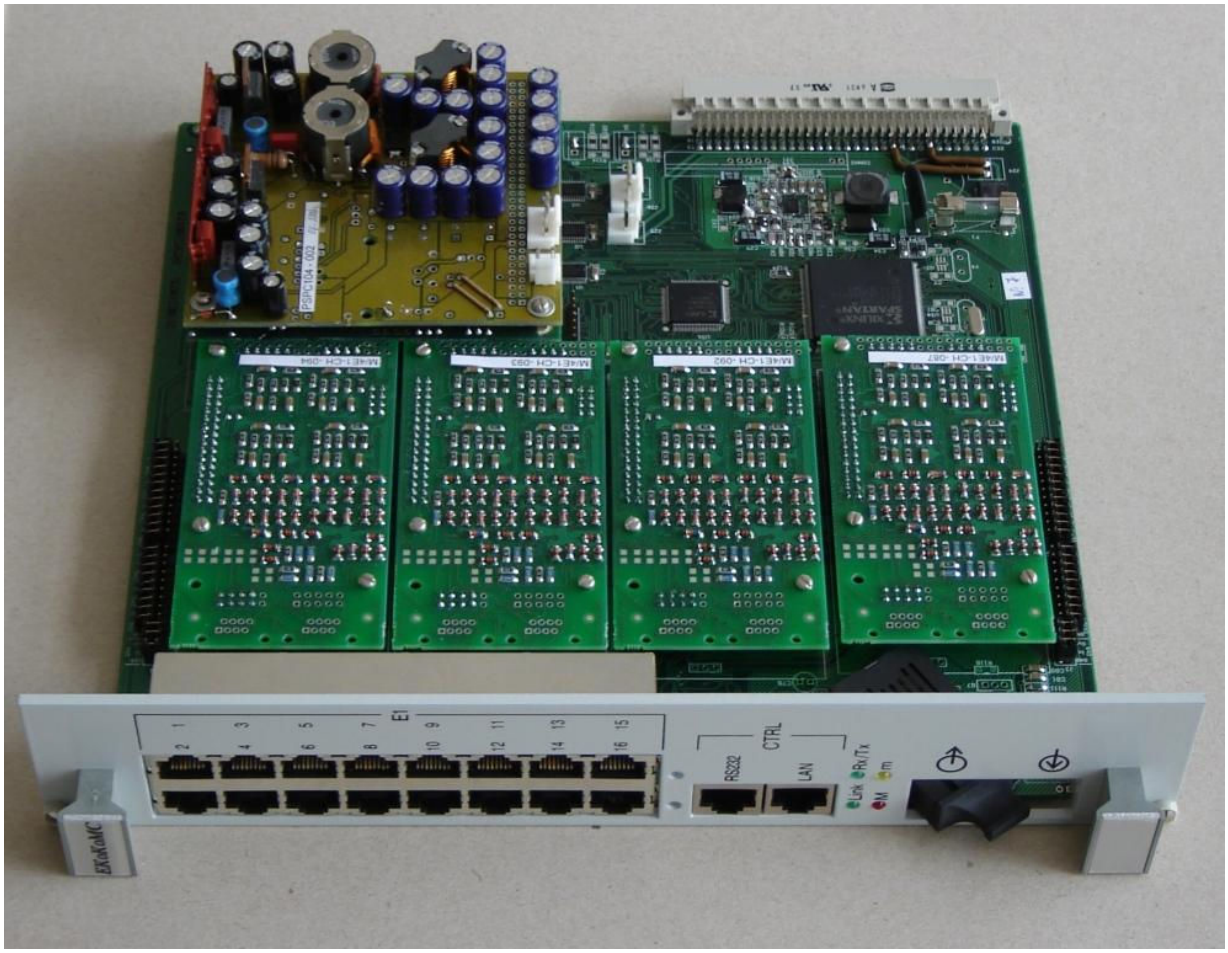
E3 Optical Multiplexer SNMP Agent Description



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General

The installed on the multiplexer SNMP agent allows the monitoring of the equipment through an Ethernet connection.

List of abbreviations

AIS	Alarm Indication Signal
FAS	Frame Alignment Signal
LOF	Loss Of Frame alignment signal
LOMF	Loss Of MultiFrame alignment signal
LOOP	Parasitic LOOPback detected
LOS	Loss Of input Signal
RAI	Remote Alarm Indication signal
TI	Trace Identifier
TIM	Trace Identification Mismatch

Additional features

In ECoCoMS' E3 optical multiplexer additional features are included. These features are obtained by using bit 12 of E3 FAS (reserved for national use) and organizing a multiframe over it. In the multiframe both equipment – the local one and the remote one, can exchange information which allows to:

1. Monitor the remote E3 interface from the local host;
2. Monitor the remote E1 interfaces from the local host;
3. View bit errors on the local and remote E3 interfaces from the local host;
4. Insert trace identifiers to the local and remote equipment;
5. Compare the expected TI with the received TI and generate TIM alarm;
6. Detect LOOP if the received TI is equal to the transmitted TI.

The monitoring of the remote unit reduces the number of trap receiver IP addresses.

The detection of parasitic loopback gives the advantage of the ECoCoMS' E3 optical multiplexer to operate over single fiber using a simple optical splitter.

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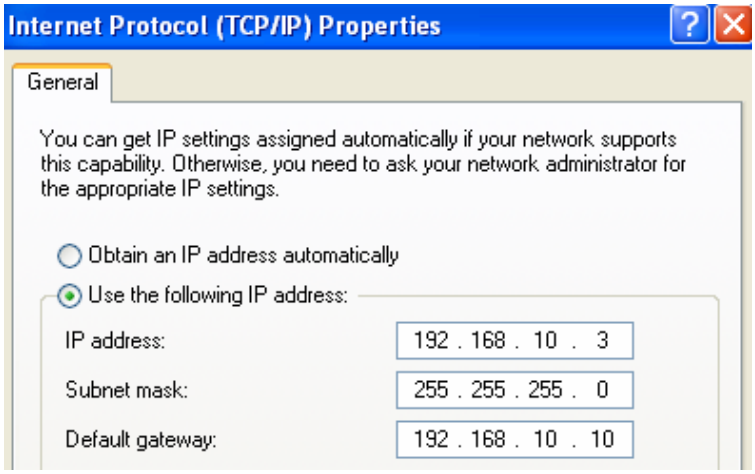
Description

Initially the units are configured with the following IP address: 192.168.10.1 or 192.168.10.2. To establish your first connection to the unit you have to configure your network connection in the following way, for example:

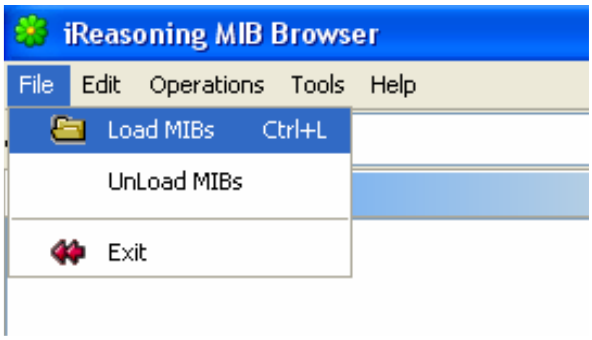


Please, make sure that no other devices in your network have the same IP addresses, or for the initial setup of the unit connect only one single computer to its LAN port.

After this you have to download the file **e3control.mib** from ECoCoMS website following the link http://www.ecocoms.com/home/bg/services/software#e3/o-mib .

Then you have to copy this file in the appropriate directory of your SNMP based Network Management System.

An example of how to proceed further is given using iReasoning MIB Browser. At startup the browser shows the following:



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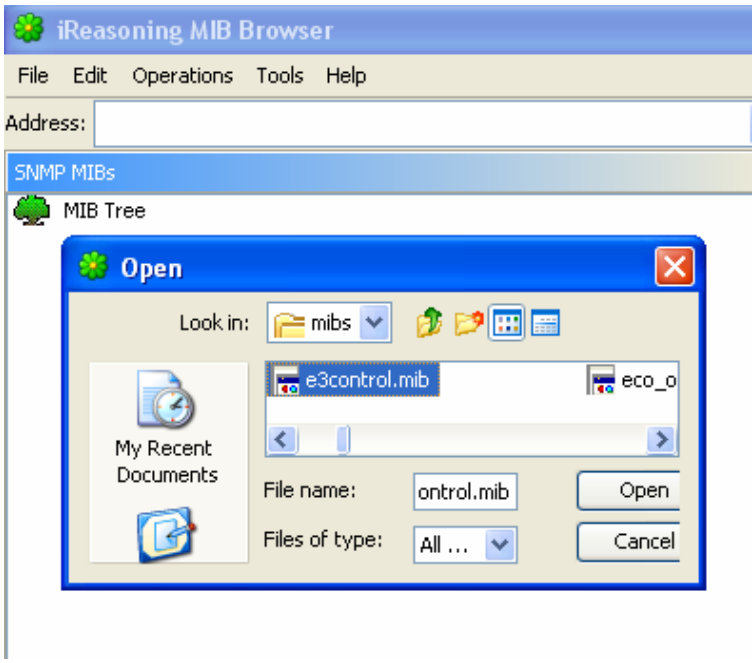
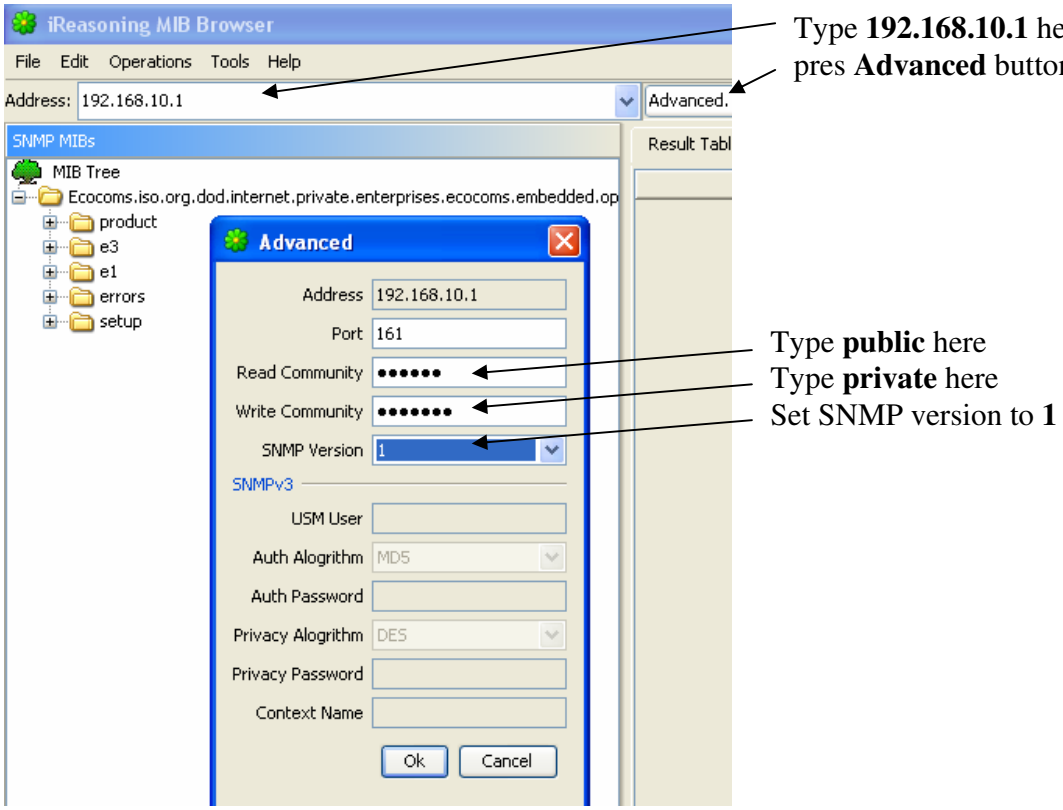
Here you have to load **e3control.mib**, which is already in the directory named **mibs** of this browser main directory.



Step 1: Now you are ready to enter the IP address of the unit to be monitored, as shown below:



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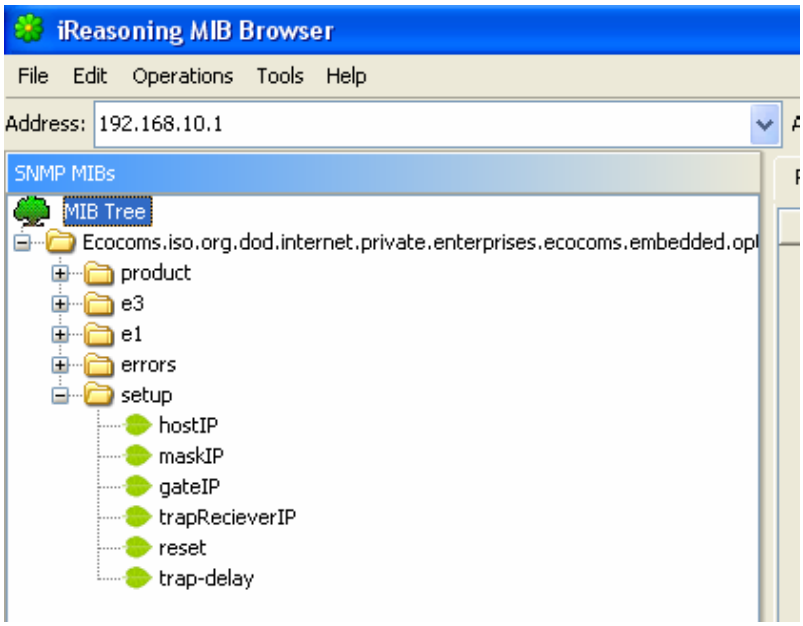
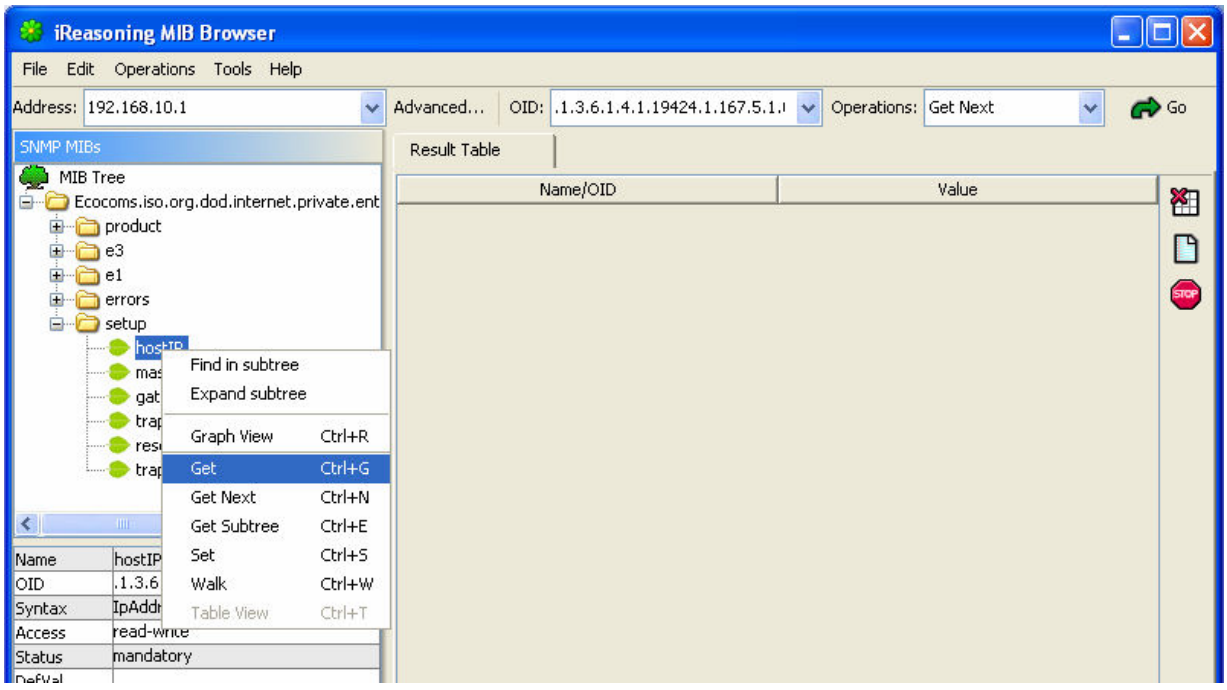
Step 2: Now you can proceed to setup the unit according to its further connection in your NMS. Open the setup tree:



You can check your connectivity by right mouse button on **host IP** and selecting **Get**



You should get the default IP address of the unit: 192.168.10.1. If you do not get it, please repeat thoroughly everything from the beginning of the description.

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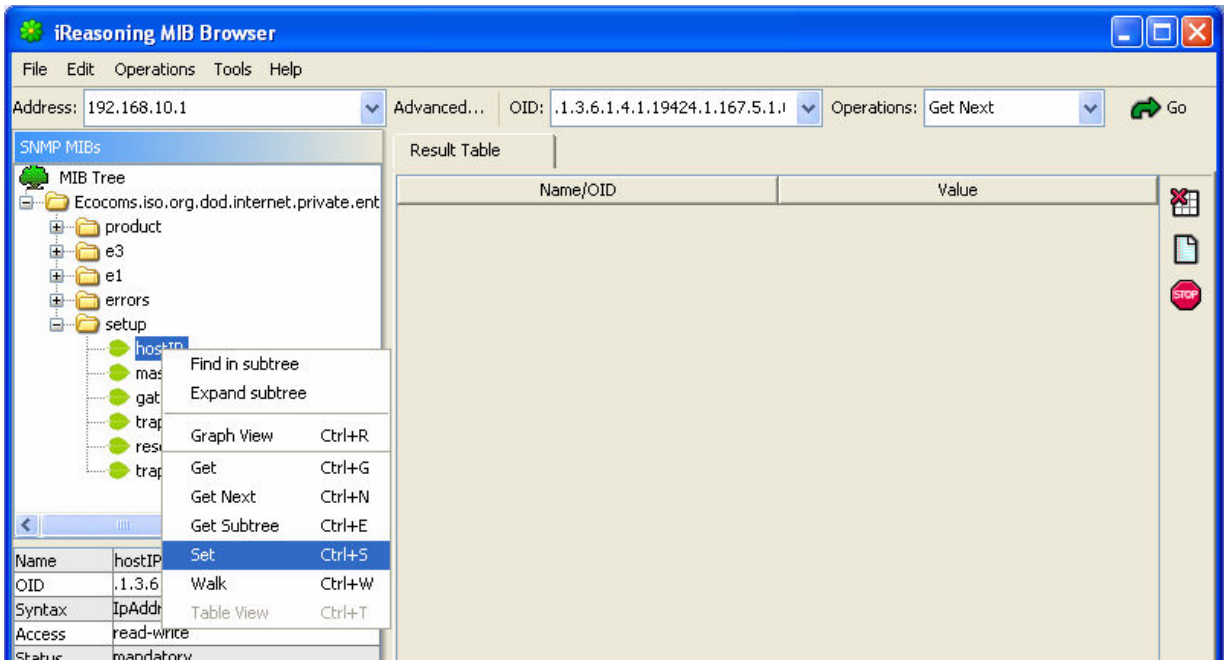
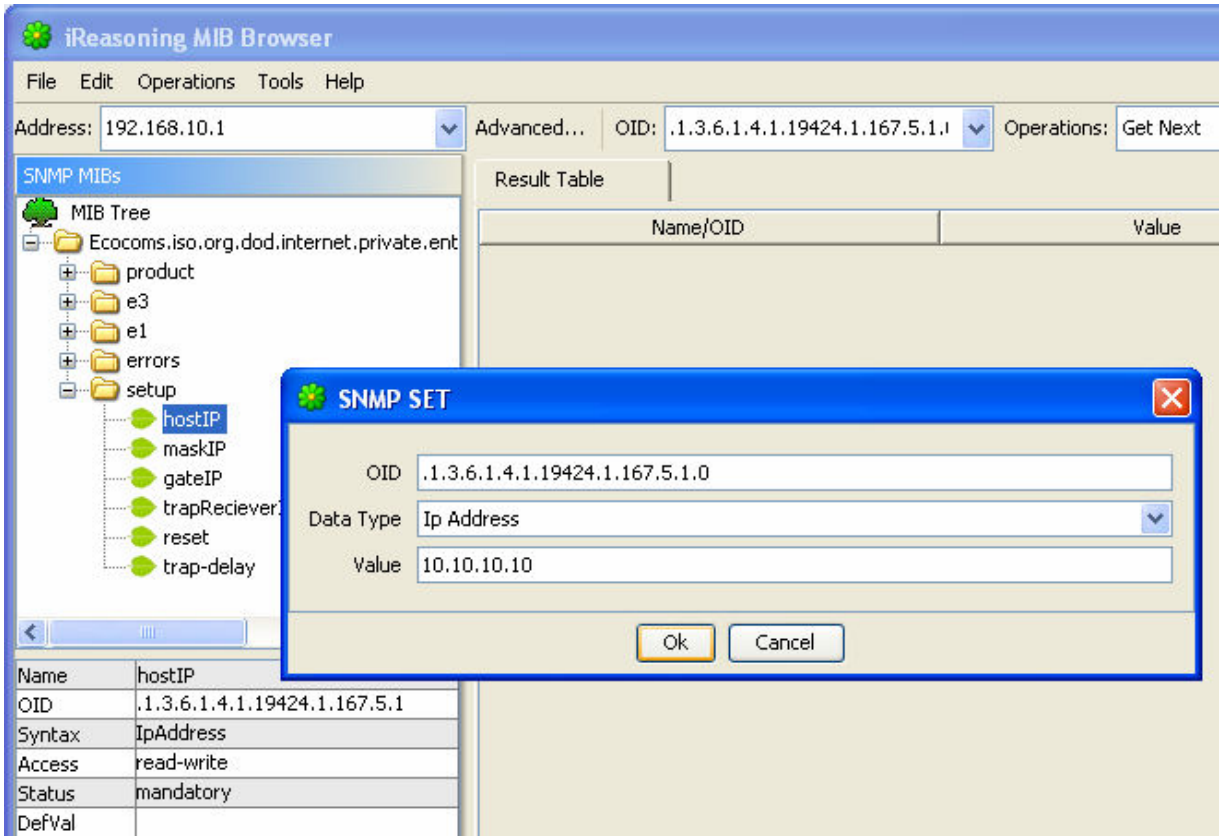
In the same manner selecting **Set** you can setup the desired new IP address of the unit.



For example typing 10.10.10.10 in the **Value** of the **SNMP SET**



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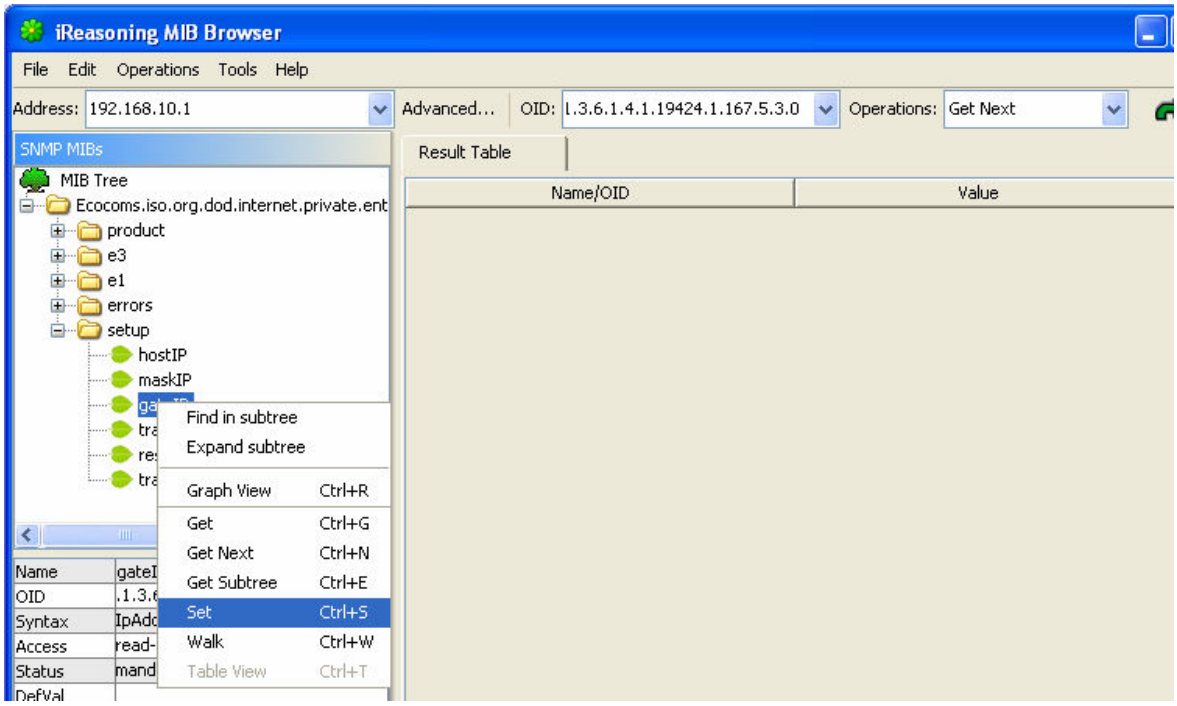
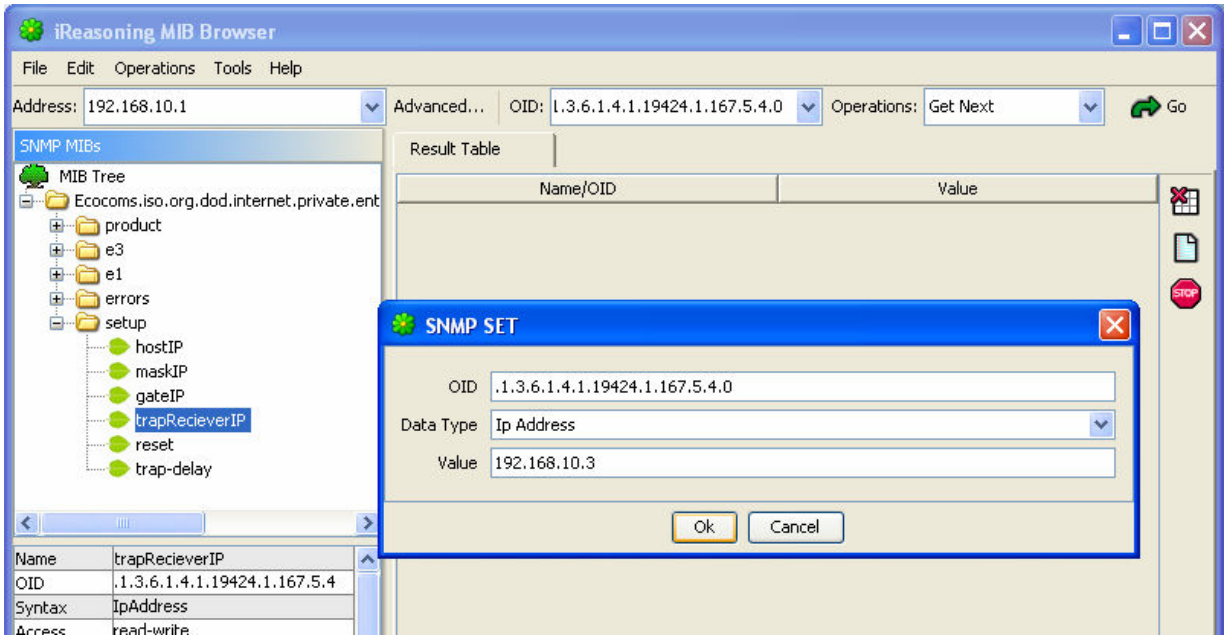
This value of the hostIP address is only an example - you can type any valid IP address in this field. After that you shall type the same address in the browser **Address** and repeat the described in Step 1.

Step 3: In the same way you can change the **gateIP** address



And the **trapReceiverIP**, which shall coincide with the IP address of your PC, as shown below:



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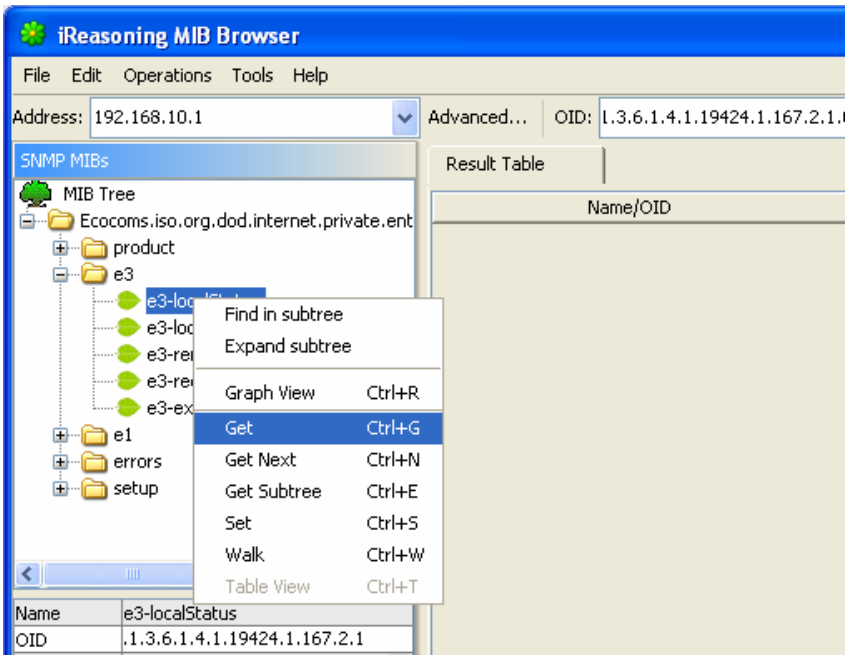
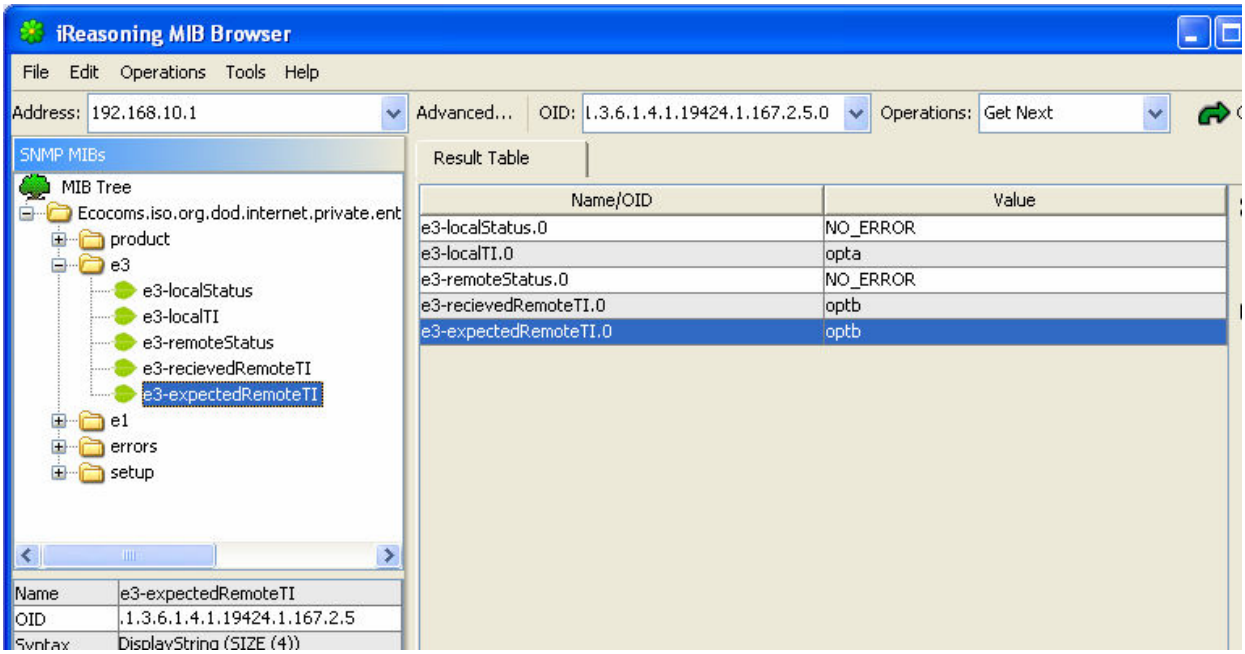
Once everything in the IP connection is settled the monitoring of the unit is in progress. Here some examples of the monitoring possibilities are shown:



Getting the status of the E3 interfaces:



You must set up the TI of the units, which can be settled only locally. You dispose of 4 characters to shortly describe your line, and be sure that both units in the point to point connection have different TIs.

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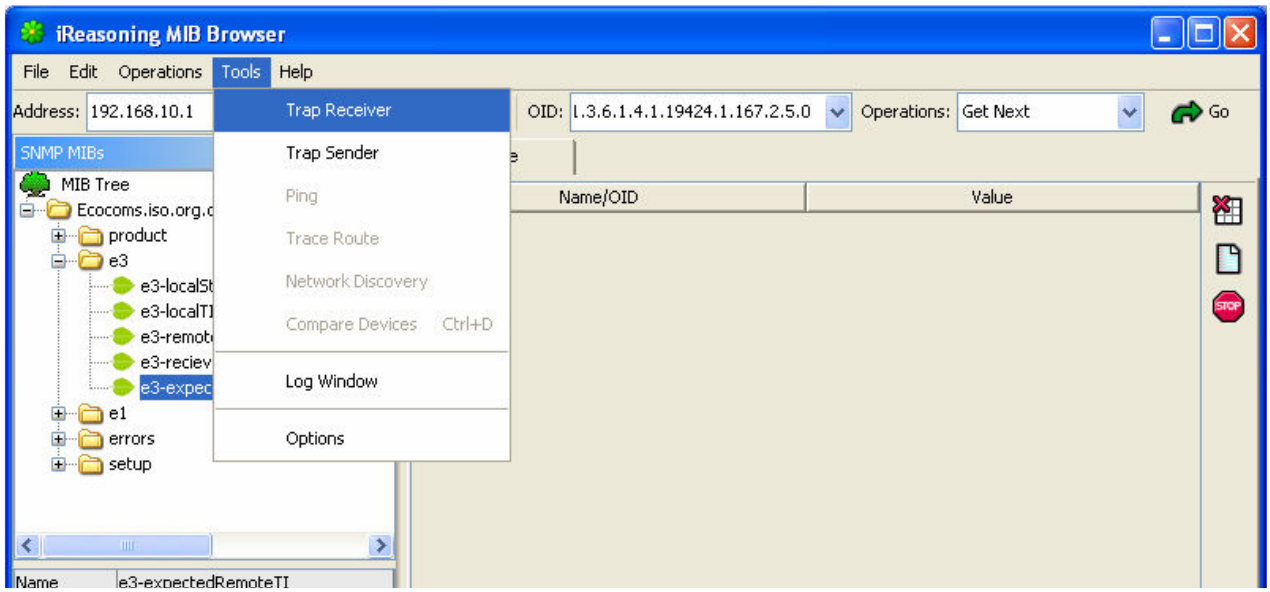
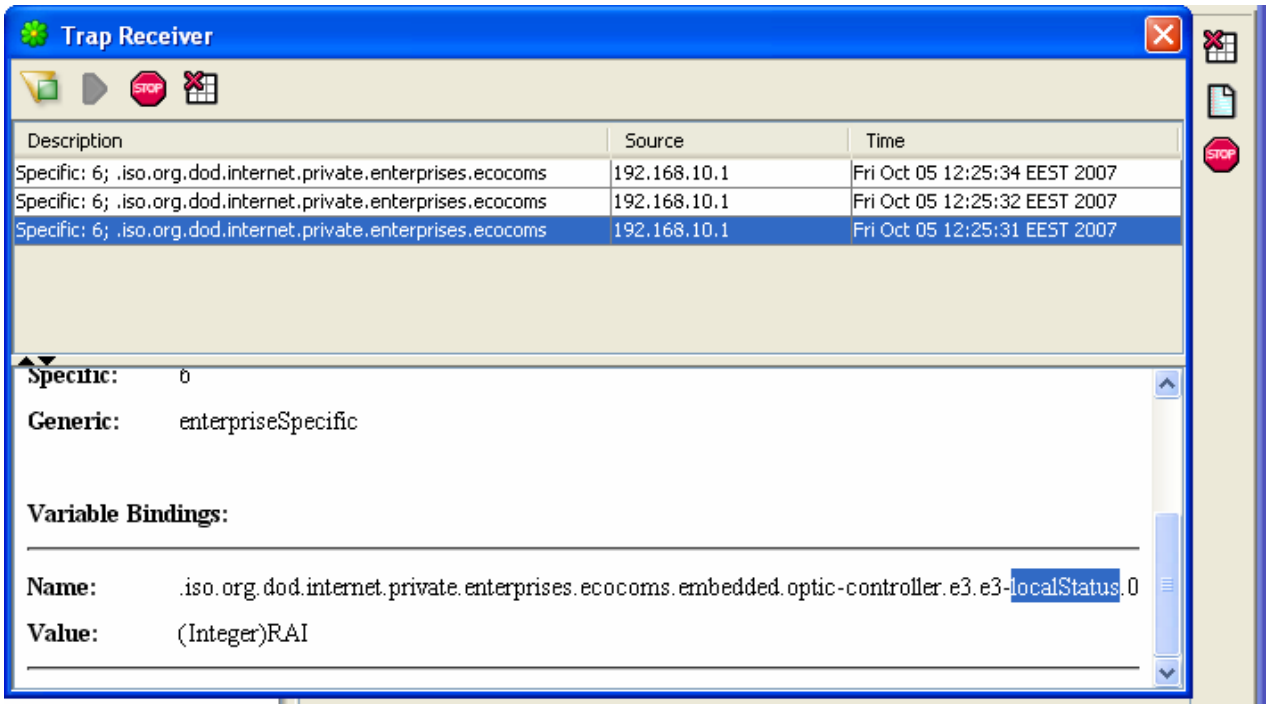
From the Tools menu of the browser you can start the Trap Receiver, as shown:



After shortly interrupting one of the transmission fibres, the following traps arrived:

1. Local Alarm RAI:



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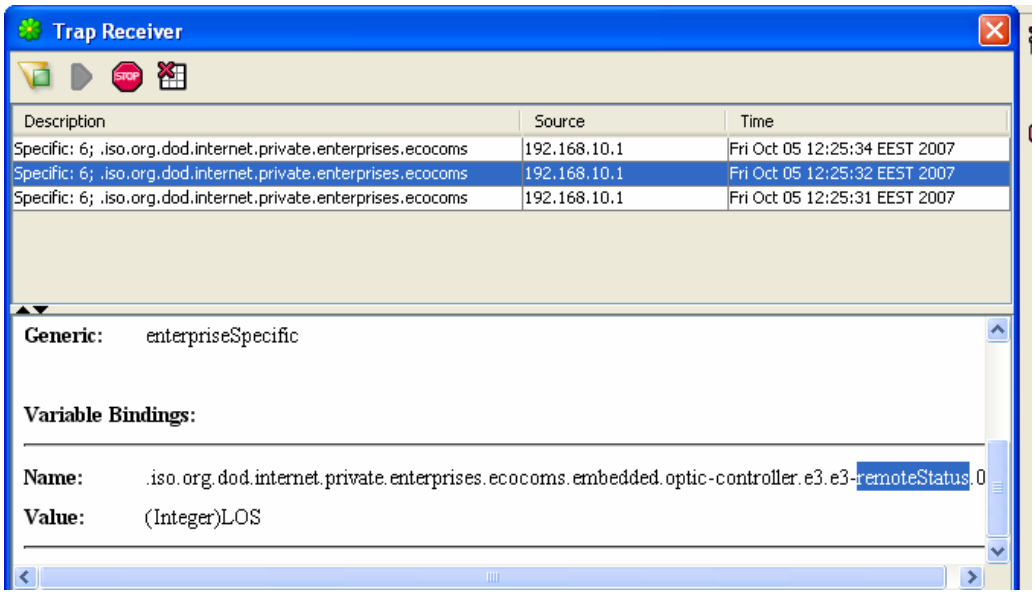
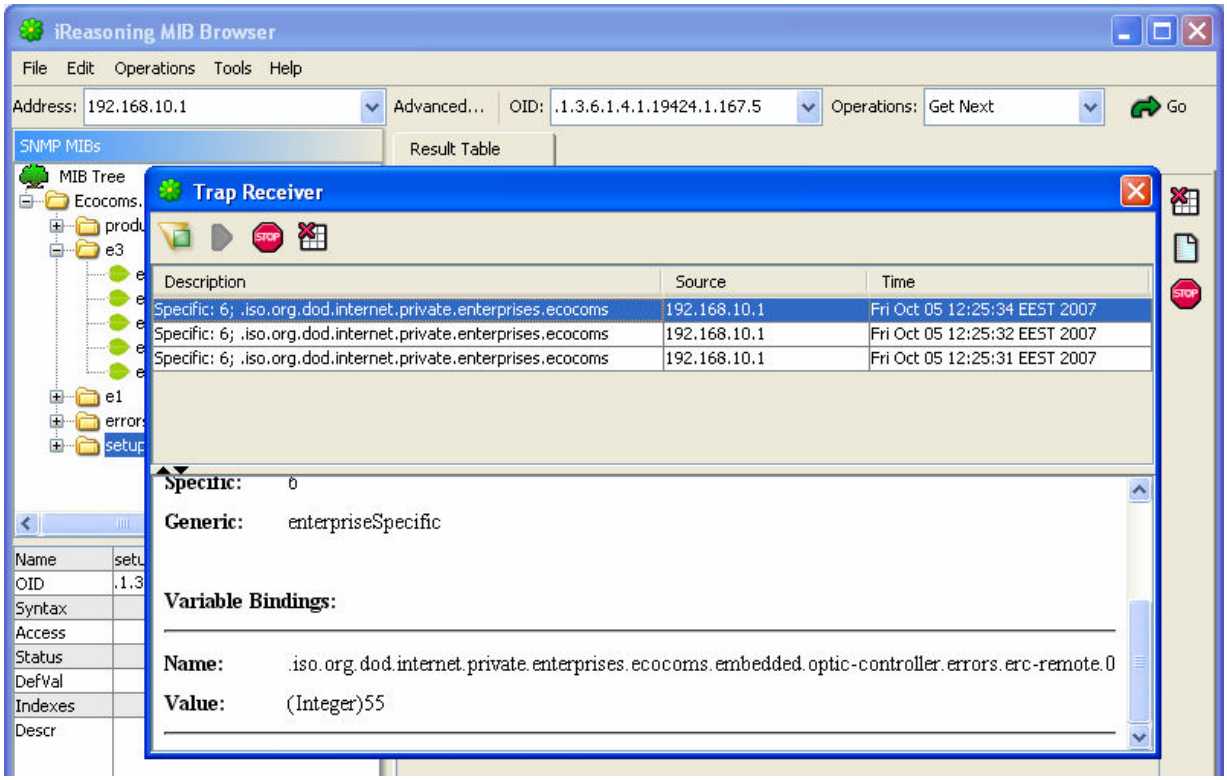
2. Remote Alarm LOS:



3. Remote Excessive Errors (during input signal recovery):



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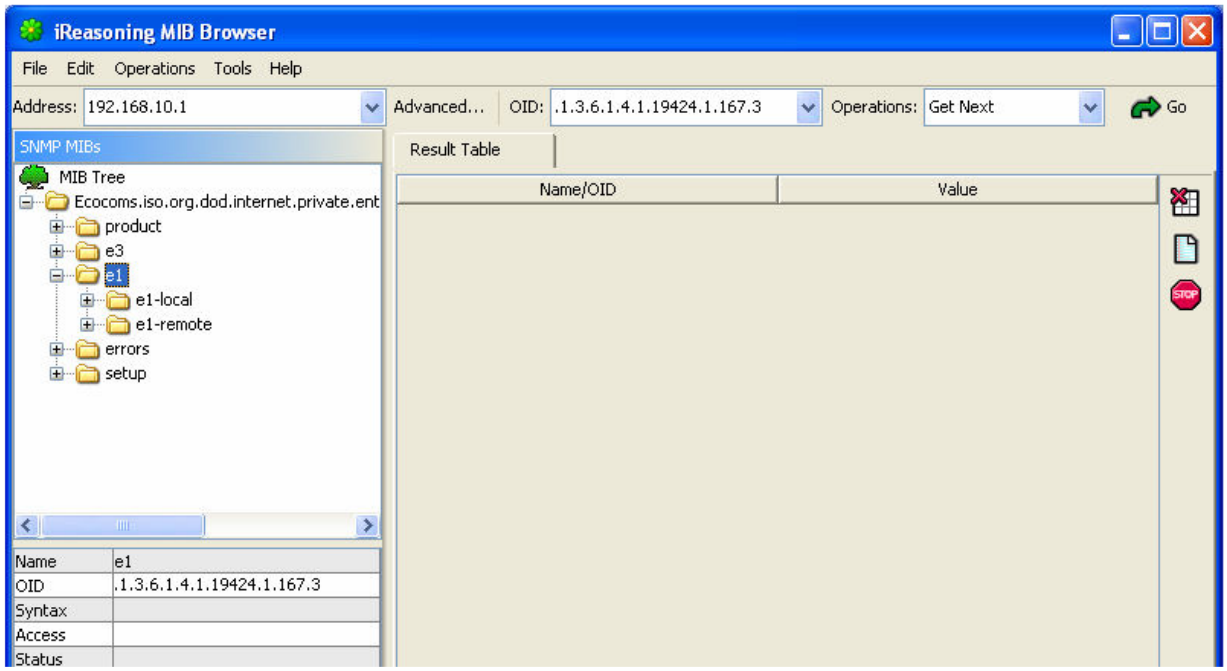
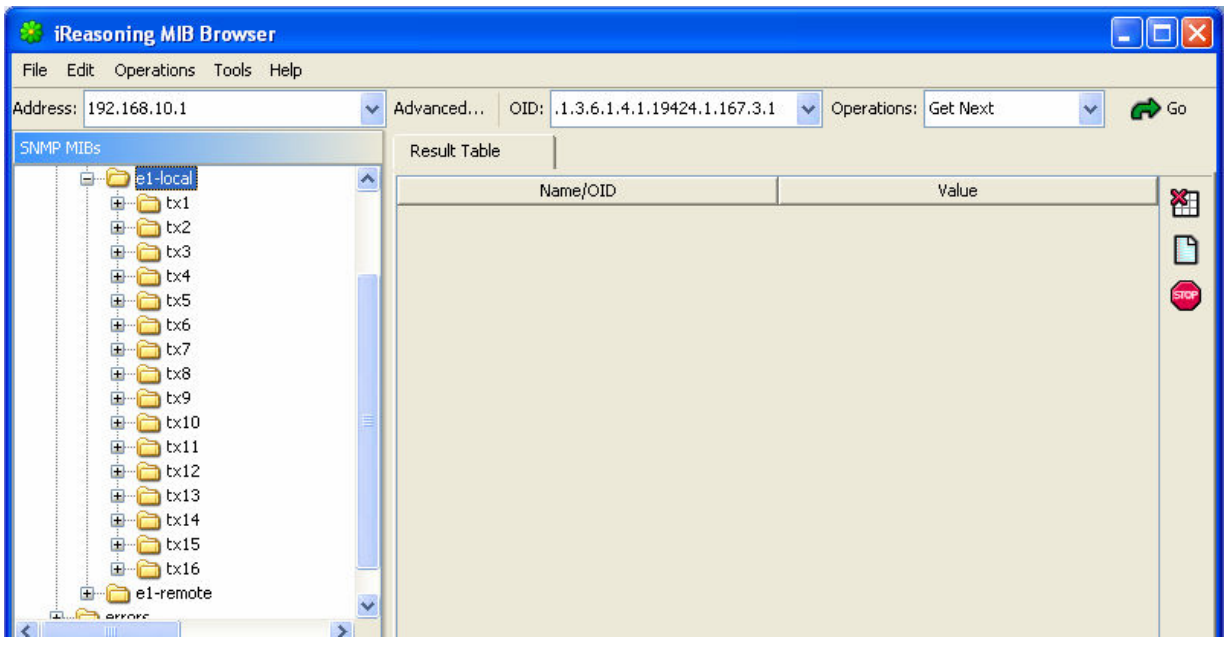
Getting the status of the E3 interfaces:

In the same manner the status of the E1 interfaces could bi get. Some illustrative screenshots are given below:





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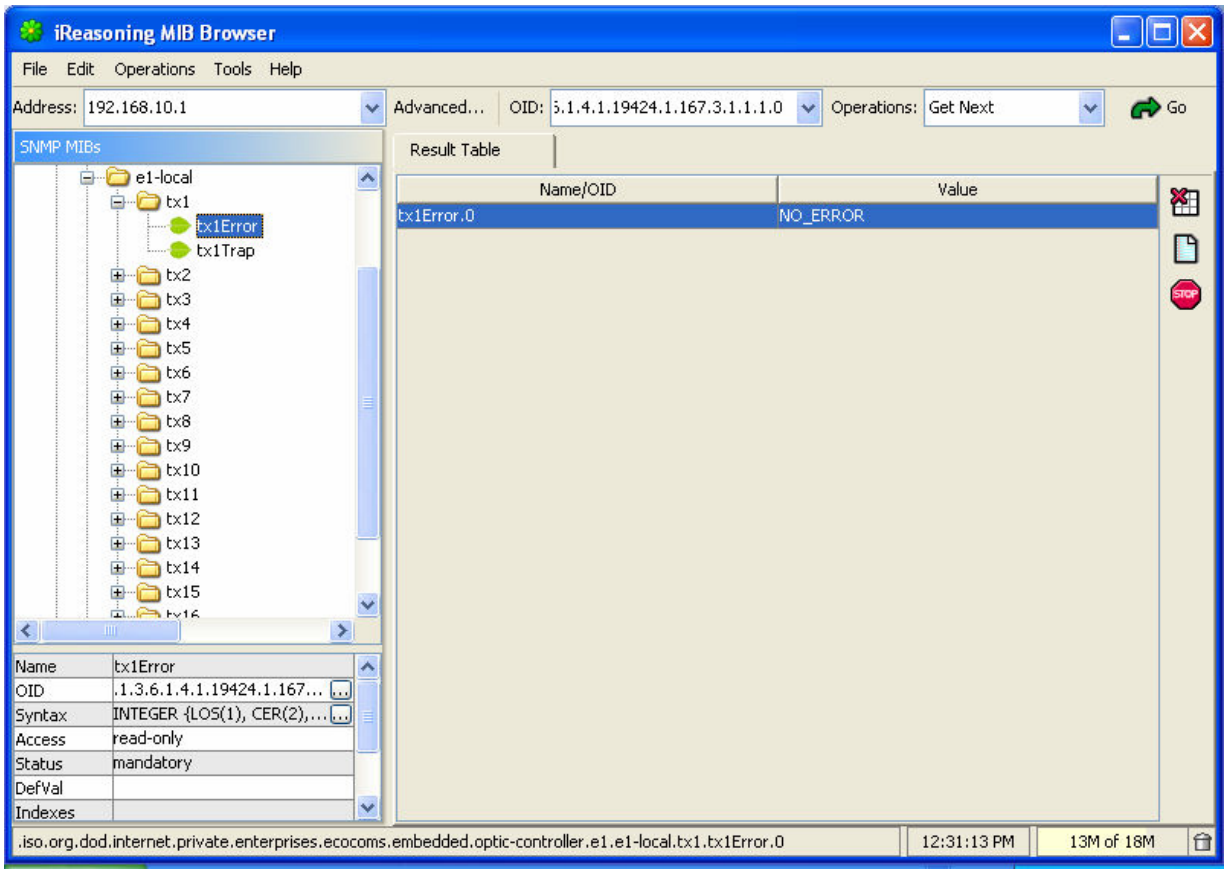
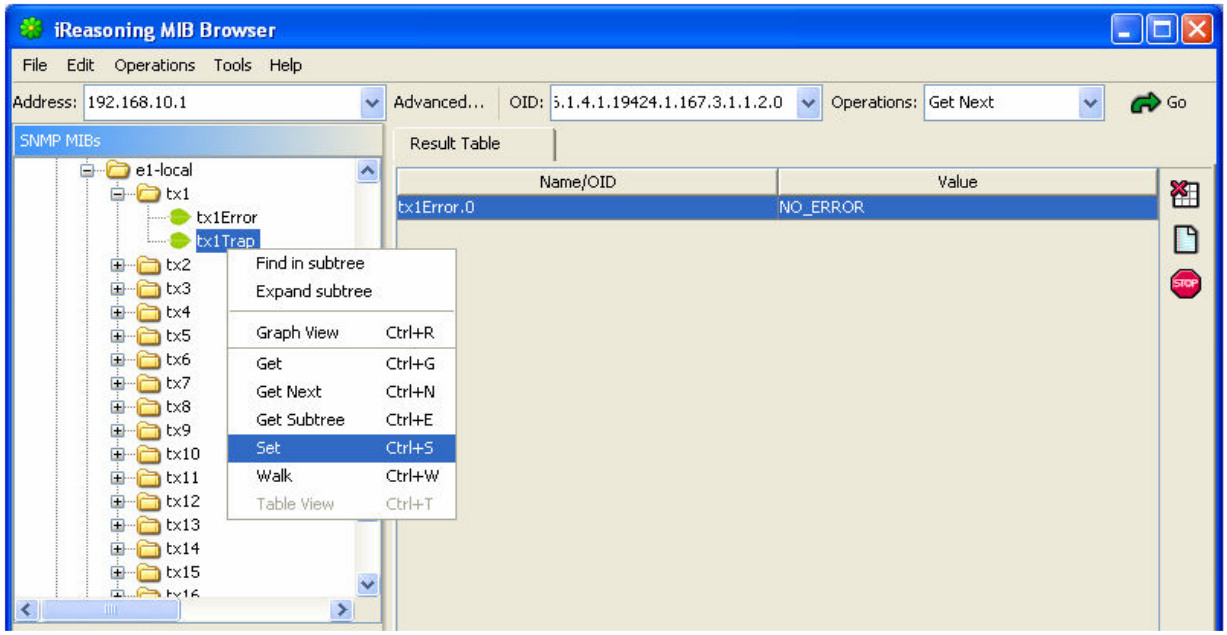


For the E1 interfaces the possibility to switch off the trap generation is provided for the case that not all of the E1 ports are connected in the beginning:



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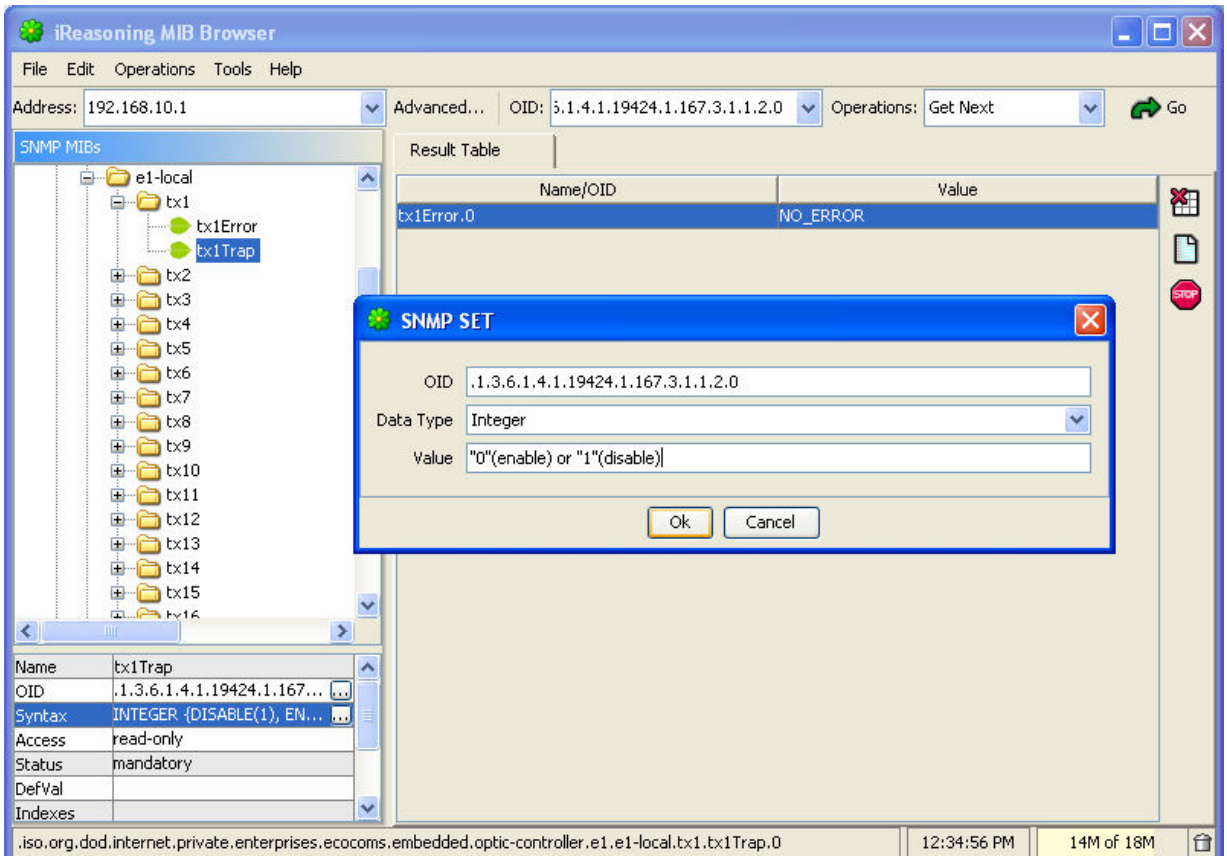
You can enable (type **0** in the **Value** field) or disable (type **1** in the **Value** field) the trap generation as shown below:



Finally you can define the trap delay for the repetition of a permanent failure indication.

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