

TMA Quick Start Guide

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1 TMA Quick Start Guide

This guide briefly highlights the Total Maintenance Application or TMA:

- It introduces TMA and describes how to start a session on the TDRE device.
- It introduces the terminology concerning the management of a TDRE device.
- It explains:
 - how to add an object to the containment tree.
 - how to upgrade the device software.
 - how to import or export the configuration of the device.
 - how to do a full export of all device parameters via the *GetAll* function. This is important in case of issues or problems in the network: a *CLI* file can be created and sent to the CSO department for a thorough analysis of the settings of the device; refer to [1.7 - Full export of device parameters via the GetAll function on page 42](#).
 - how to view and locally save files from the file system of the device.

The following gives an overview of this chapter:

- [1.1 - Connecting to a TDRE device with TMA on page 3](#)
- [1.2 - Introducing the management terminology on page 16](#)
- [1.3 - Configuring a TDRE device on page 25](#)
- [1.4 - Upgrading the device software on page 33](#)
- [1.5 - Showing and saving the current configuration on page 37](#)
- [1.6 - Exporting and importing device parameters on page 39](#)
- [1.7 - Full export of device parameters via the GetAll function on page 42](#)
- [1.8 - Using the file system of a device on page 43](#)

1.1 Connecting to a TDRE device with TMA

First, this section introduces TMA. Then it describes how to start a session on the TDRE device.

The following gives an overview of this section:

- [1.1.1 - What is TMA? on page 4](#)
- [1.1.2 - How to connect TMA? on page 4](#)
- [1.1.3 - Connecting with TMA through the control connector on page 5](#)
- [1.1.4 - Connecting with TMA over an IP network on page 8](#)
- [1.1.5 - Connecting with TMA using the assign to MAC feature on page 11](#)
- [1.1.6 - Connecting with TMA using automatic detection on page 14](#)

1.1.1 What is TMA?

TMA is the acronym for Total Maintenance Application. TMA is a free Windows software package that enables you to maintain the TDRE device, i.e. to access its configuration attributes and look at status, performance and alarm information using a user-friendly graphical user interface.

TMA is an excellent tool for complete control of the OneAccess TDRE devices. When using TMA in combination with a network management system such as OneAccess Element Manager, complete networks can be managed from one central site.

Consult the TMA manual ([PDF](#)) to find out how to install TMA and to get acquainted with the user interface.



- You will need a new version of the model file distribution if changes have been made to the attributes of the TDRE device. The most recent model files and TMA engine can always be downloaded from the OneAccess web site at <http://extranet.oneaccess-net.com/en/downloadcentre.php>.
- UDP and TCP port 1728 must be open, otherwise the TDRE devices cannot be contacted by TMA.

1.1.2 How to connect TMA?

There are three ways to establish a connection between the computer running TMA and the TDRE device:




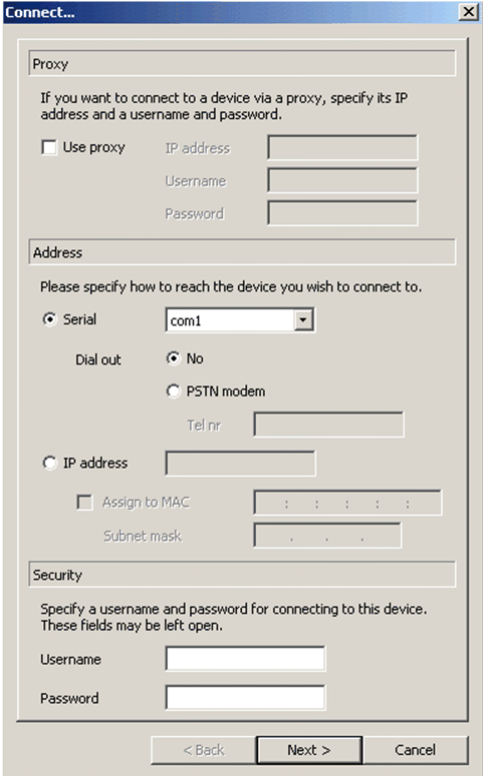
- through a serial connection, i.e. through the control connector of the TDRE device.
Refer to [1.1.3 - Connecting with TMA through the control connector on page 5](#).
- through an IP connection, i.e. through an IP connection of the TDRE device.
Refer to [1.1.4 - Connecting with TMA over an IP network on page 8](#).
- using the *assign to MAC* feature.
Refer to [1.1.5 - Connecting with TMA using the assign to MAC feature on page 11](#).
- via automatic detection.
Refer to [1.1.6 - Connecting with TMA using automatic detection on page 14](#).


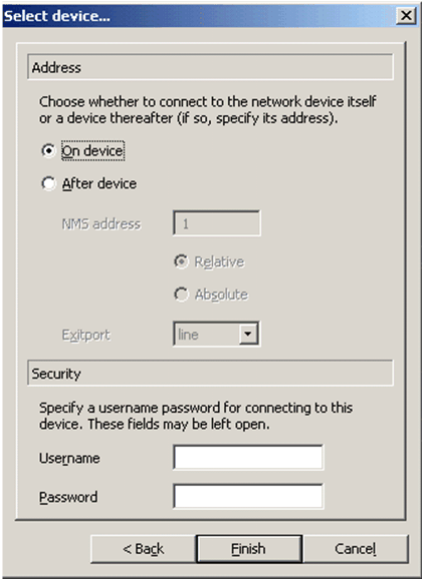

The following table gives an overview of which method can be used for which type of TDRE device:

Method	Non IP device	IP device with IP address	IP device without IP address (MAC based)
via serial connection	x	x	x
via IP		x	
via <i>Assign to MAC</i> feature			x
via automatic detection		x	x

1.1.3 Connecting with TMA through the control connector

To establish a connection between TMA and the TDRE device through the control connector, proceed as follows:

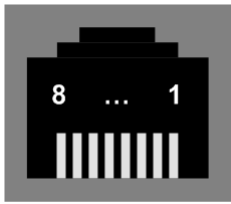
Step	Action
1	<p>Connect a serial port of your computer (e.g. COM1) through a straight DB9 male - female cable or DB9 - RJ45 cable with the control connector of the device.</p> <div style="text-align: right;">   </div> <p>Following this table, the pin layout of the RJ45 and DB9 control connector is shown.</p>
2	Start TMA.
3	<p>In the TMA window, either ...</p> <ul style="list-style-type: none"> • select from the menu bar: <u>C</u>onnect → <u>D</u>evice... • or press the short-cut key: Ctrl+N • or click on the <i>Connect to device</i> button:  <p>The <i>Connect...</i> (to a device) window is displayed as in the following figure:</p> <div style="text-align: right;">  </div>
4	<p>In the <i>Connect...</i> (to a device) window, specify the following:</p> <ul style="list-style-type: none"> • Select the option <u>S</u>erial and specify the COM port of your computer to which the device is connected. COM1 up to COM32 are supported. • If previously a user name and password have been configured in the device then also fill in these fields.

Step	Action
5	<p>Click on the <i>Next ></i> button.</p> <p>⇒The second <i>Select device...</i> window is displayed.</p> <hr/> <p> Note that this second window is product dependant, so it will not always appear.</p> <hr/>
6	<p>In the <i>Select device...</i> window, proceed as follows ...</p> <p>... for local Access:</p> <ul style="list-style-type: none"> select <u>O</u>n device. <p>... to connect to a remote device:</p> <ul style="list-style-type: none"> select <u>A</u>fter device. refer to the TMA manual (PDF) itself, for a detailed explanation. 
7	Click on the <i>Finish</i> button.
8	<p>After clicking the Finish button, it is possible that TMA will update the model file on your PC:</p> <ul style="list-style-type: none"> Each TDRE device has its own model file. This file contains the information that TMA needs to connect to the device and exchange information with the device. The model files have been installed separately from TMA itself. If you connect to a device with recent firmware, the model file on the device might be more recent than the one installed on the pc running TMA. In that case, the model file will have to be re-installed on the pc. This actually means that it will be uploaded from the device to the pc: TMA will ask to upload the model from the connected device automatically; the following window will appear:  <ul style="list-style-type: none"> When clicking <i>Yes</i>, the model will be uploaded. When clicking <i>No</i>, a message will appear warning the user that a valid model file is needed. If the model file on the pc is not up-to-date, TMA might not be able to connect to the device.
9	After a couple of seconds, the attributes of the TDRE device appear in the TMA window.

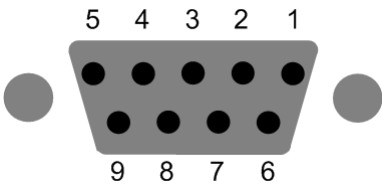
RJ45 control connector layout

Data: RS232, 9600 bps, 8 data bits, no parity, 1 stop bit.

The following table shows the connector layout of the RJ45 Console connector:

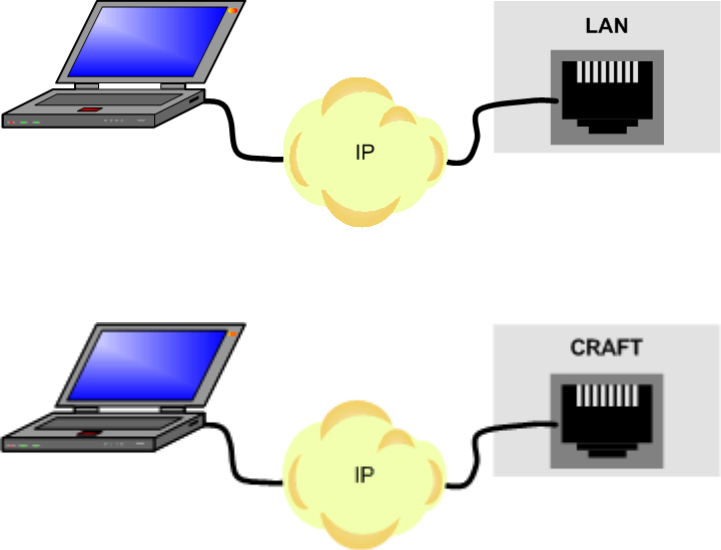

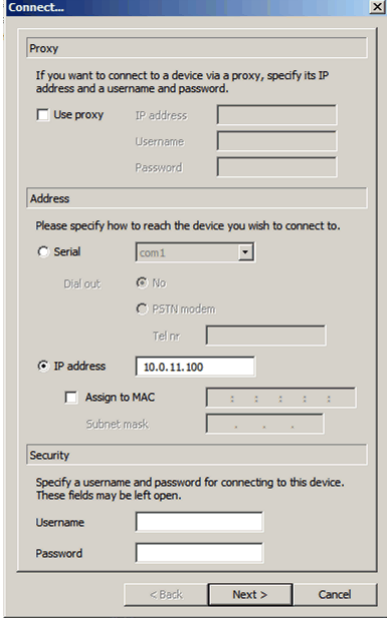
Pin	Abbreviation	Signal	DCE	Figure
1	RD	Received data	Out	
2	TD	Transmitted data	In	
3	GND	Ground	-	
4	NC	Not connected	-	
5	NC	Not connected	-	
6	Cable type		-	
7	-	-	-	
8	-	-	-	



The following table shows the connector layout of the DB9 Console connector:

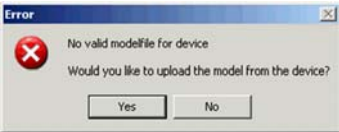
Pin	Signal		DCE	Figure
1	not used	-	-	
2	Receive Data	RxD	output	
3	Transmit Data	TxD	input	
4	not used	-	-	
5	GND	GND	-	
6	not used	-	-	
7	not used	-	-	
8	not used	-	-	
9	not used	-	-	

1.1.4 Connecting with TMA over an IP network

To establish a connection between TMA and the TDRE device over an IP network, proceed as follows:

Step	Action
1	<p>Connect the IP network to ...</p> <ul style="list-style-type: none"> the network port of your PC, the LAN or Craft connector of the TDRE device. 
2	Start TMA.
3	<p>In the TMA window, either ...</p> <ul style="list-style-type: none"> select from the menu bar: <u>C</u>onnect → <u>D</u>evice... or press the short-cut key: Ctrl+N or press on the <i>Connect to device</i> button:  <p>The <i>Connect...</i> (to a device) window is being displayed as in the following figure:</p> 

Step	Action
4	<p>In the <i>Connect...</i> (to a device) window, specify the following:</p> <ul style="list-style-type: none"> • Select the option <i>IP address</i> and enter the IP address of the TDRE device. • If a user name and password have previously been configured in the TDRE device then also fill in these fields. <hr/> <p> Before you are able to establish a connection over an IP network, you have to configure an IP address and a default gateway (optional) in the TDRE device. You can do this by first connecting TMA to the TDRE device through the control connector, and then configuring an IP address and a default gateway.</p> <hr/>
5	<p>Click on the <i>Next ></i> button.</p> <p>⇒The second <i>Connect...</i> window is displayed.</p> <hr/> <p> Note that this second window is product dependant, so it will not always appear.</p> <hr/>
6	<p>In the <i>Select device...</i> window, proceed as follows</p> <p>...</p> <p>... for local Access:</p> <ul style="list-style-type: none"> • select <i>On device</i>. <p>... to connect to a remote device:</p> <ul style="list-style-type: none"> • select <i>After device</i>. • refer to the TMA manual (PDF) itself, for a detailed explanation. <div data-bbox="963 1028 1385 1603" style="float: right; border: 1px solid gray; padding: 5px;"> </div>
7	<p>Click on the <i>Finish</i> button.</p>

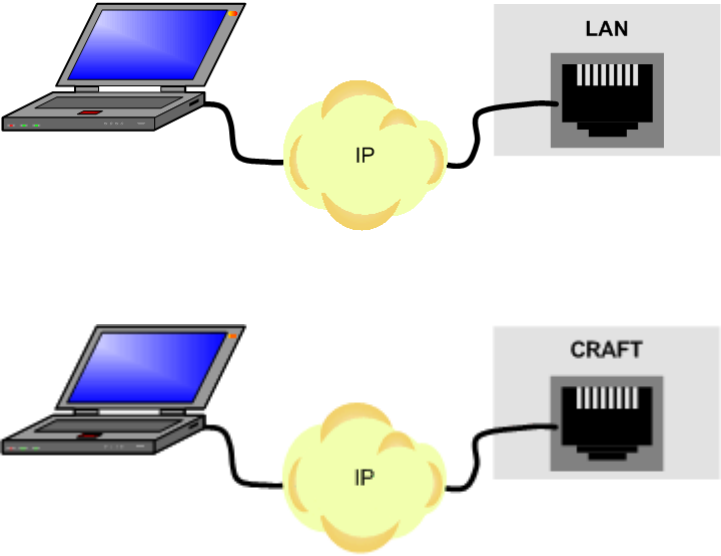

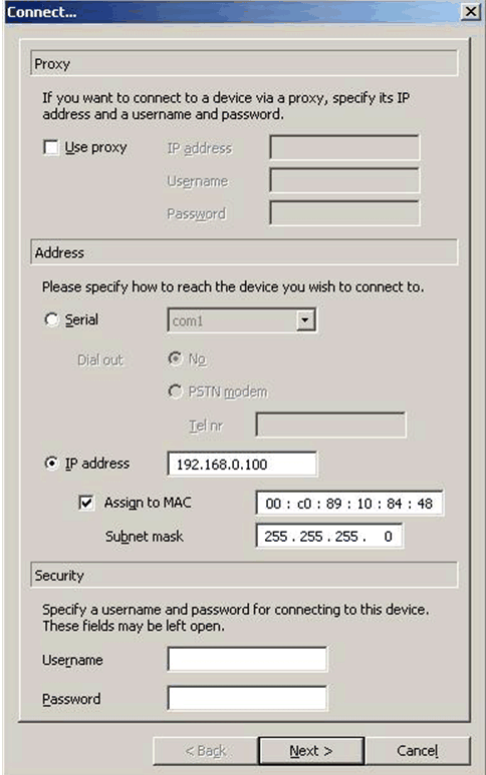
Step	Action
8	<p>After clicking the Finish button, it is possible that TMA will update the model file on your PC:</p> <ul style="list-style-type: none">• Each TDRE device has its own model file. This file contains the information that TMA needs to connect to the device and exchange information with the device. The model files have been installed separately from TMA itself. If you connect to a device with recent firmware, the model file on the device might be more recent than the one installed on the pc running TMA.• In that case, the model file will have to be re-installed on the pc. This actually means that it will be uploaded from the device to the pc: TMA will ask to upload the model from the connected device automatically; the following window will appear: • When clicking <i>Yes</i>, the model will be uploaded. When clicking <i>No</i>, a message will appear warning the user that a valid model file is needed. If the model file on the pc is not up-to-date, TMA might not be able to connect to the device.
9	After a couple of seconds, the attributes of the TDRE device appear in the TMA window.



1.1.5 Connecting with TMA using the assign to MAC feature

By default, there is no IP address in the default/factory configuration of the TDRE device. This means that you temporarily have to provide the device with an IP address yourself by using the *assign to MAC* feature in the TMA application.

By using this method, you will assign a temporary IP address to the default bridge group because by default, all interfaces are in bridging mode and linked to this default bridge group.

Proceed as follows:

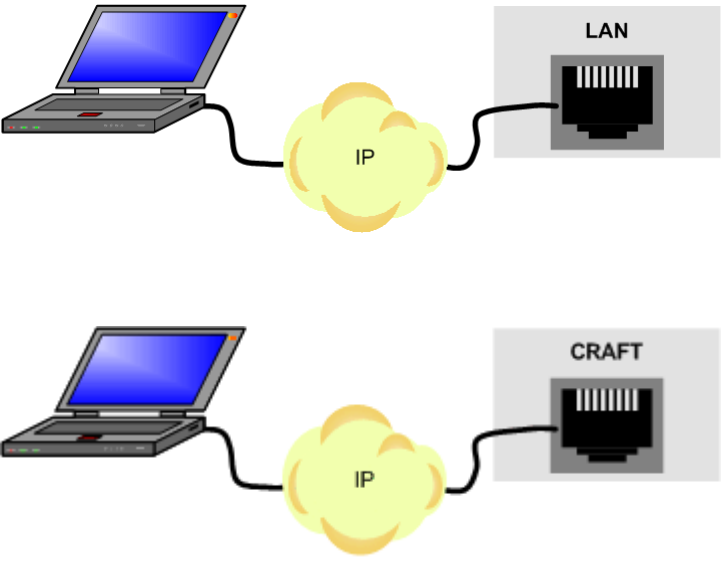

Step	Action
1	<p>Connect the IP network to ...</p> <ul style="list-style-type: none"> • the network port of your PC, • the LAN or Craft connector of the TDRE device. 
2	Start TMA.
3	<p>In the TMA window, either ...</p> <ul style="list-style-type: none"> • select from the menu bar: <i>C</i>onnect → <i>D</i>evice... • or press the short-cut key: Ctrl+N • or press on the <i>Connect to device</i> button:  <p>The <i>Connect...</i> (to a device) window is being displayed as in the following figure:</p> 


Step	Action
4	<p>In the <i>Connect...</i> (to a device) window, specify the following:</p> <ul style="list-style-type: none"> • Select the option <i>IP address</i> and enter the temporary IP address you want to give to the device. • Below that, enter the MAC address of the device itself. This address can be found on the sticker on the device. • Below the MAC address, also enter the subnet mask for the temporary IP address. • If a user name and password have previously been configured in the TDRE device then also fill in these fields. <hr/> <p> Remarks</p> <ul style="list-style-type: none"> • Note that this is a temporary IP address (this means that if you boot the device, it will be lost). A definite IP address still has to be configured on the device. • The IP address given here must be in the same subnet as the PC. <hr/>
5	<p>Click on the <i>Next ></i> button.</p> <p>⇒The second <i>Connect...</i> window is displayed.</p> <p>By clicking next, TMA will try to discover (ARP) this MAC address in the network. When discovered, TMA will provision the specified IP address to the IP stack of the bridgeGroup. This IP address can now be used for configuring and maintaining the device.</p> <hr/> <p> Note that this second window is product dependant, so it will not always appear.</p> <hr/>
6	<p>In the <i>Select device...</i> window, proceed as follows ...</p> <p>... for local Access:</p> <ul style="list-style-type: none"> • select <i>On device</i>. <p>... to connect to a remote device:</p> <ul style="list-style-type: none"> • select <i>After device</i>. • refer to the TMA manual (PDF) itself, for a detailed explanation. <div data-bbox="951 1384 1374 1960" style="border: 1px solid gray; padding: 5px;"> </div>
7	<p>Click on the <i>Finish</i> button.</p>

Step	Action
8	<p>After clicking the Finish button, it is possible that TMA will update the model file on your PC:</p> <ul style="list-style-type: none"> Each TDRE device has its own model file. This file contains the information that TMA needs to connect to the device and exchange information with the device. The model files have been installed separately from TMA itself. If you connect to a device with recent firmware, the model file on the device might be more recent than the one installed on the pc running TMA. In that case, the model file will have to be re-installed on the pc. This actually means that it will be uploaded from the device to the pc: TMA will ask to upload the model from the connected device automatically; the following window will appear: <div data-bbox="392 734 735 864" data-label="Image"> </div> When clicking <i>Yes</i>, the model will be uploaded. When clicking <i>No</i>, a message will appear warning the user that a valid model file is needed. If the model file on the pc is not up-to-date, TMA might not be able to connect to the device.
9	After a couple of seconds, the attributes of the TDRE device appear in the TMA window.

1.1.6 Connecting with TMA using automatic detection

To establish a connection between TMA and the TDRE device via the *autoDiscover* function, proceed as follows:

Step	Action
1	<p>Connect the IP network to ...</p> <ul style="list-style-type: none"> • the network port of your PC, • the LAN or Craft connector of the TDRE device. <div style="text-align: center;">  </div>
2	Start TMA.
3	<p>Click the <i>Auto-Discovery</i> button:  .</p> <p>This activates the <i>autoDiscover</i> function, which is able to discover CMS2 devices on the local Layer2 Ethernet network.</p>

Step	Action																																																																																																																																																																					
4	<ul style="list-style-type: none"> After clicking this button, TMA starts looking for CMS2 devices, and builds up a list of detected devices which is shown in the <i>AutoDetect window</i>. The following figure is an example of such a window: <div data-bbox="386 445 1374 1137" data-label="Image"> <table border="1"> <thead> <tr> <th>IP Address</th> <th>Mac Address</th> <th>Serial Number</th> <th>SysName</th> <th>SysDescription</th> </tr> </thead> <tbody> <tr> <td>1.0.18.202</td> <td>00:CO:89:08:11:91</td> <td>40528785</td> <td>dut_1_1431CesG703</td> <td>Telindus 1431 SHDSL ATM Router 2P</td> </tr> <tr> <td></td> <td>00:CO:89:0F:65:2C</td> <td>41008940</td> <td></td> <td>CPE 1432 SHDSL ATM Router 2P</td> </tr> <tr> <td>1.0.4.206</td> <td>00:CO:89:08:11:8E</td> <td>40528782</td> <td>atmSwitching_1431_Left</td> <td>Telindus 1431 SHDSL ATM Router 2P</td> </tr> <tr> <td>1.0.27.206</td> <td>00:CO:89:08:11:5F</td> <td>40528735</td> <td>telindus1431frf_dut_1</td> <td>Telindus 1431 SHDSL ATM Router 2P</td> </tr> <tr> <td>1.0.6.253</td> <td>00:CO:89:03:87:96</td> <td>40243606</td> <td></td> <td>Telindus 1031 Router</td> </tr> <tr> <td>1.0.30.210</td> <td>00:CO:89:0E:5E:C2</td> <td>40941762</td> <td>bert_1_1432CesSerial</td> <td>Telindus 1033 Router</td> </tr> <tr> <td>1.0.4.202</td> <td>00:CO:89:03:8A:04</td> <td>40231940</td> <td>atmSwitching_1031_Left</td> <td>Telindus 1031 Router</td> </tr> <tr> <td>1.0.15.202</td> <td>00:CO:89:08:11:8B</td> <td>40528779</td> <td>dut_1_1431CesSerial</td> <td>Telindus 1431 SHDSL ATM Router 2P</td> </tr> <tr> <td>1.0.27.202</td> <td>00:CO:89:03:87:77</td> <td>40231287</td> <td>telindus1431frf_bert_1</td> <td>Telindus 1032 Router</td> </tr> <tr> <td>172.31.127.35</td> <td>00:CO:89:03:11:33</td> <td>40201011</td> <td>Setup30_2400 shdsl</td> <td>Telindus 2423</td> </tr> <tr> <td>172.31.127.20</td> <td>00:CO:89:03:86:87</td> <td>40243335</td> <td>setup 26 errortester for ces on alcatel</td> <td>Telindus 1032 Router</td> </tr> <tr> <td>172.31.127.55</td> <td>00:CO:89:03:4D:A5</td> <td>40216485</td> <td>setup10_1061_octE1_PPP_4E1_top</td> <td>Telindus 1061</td> </tr> <tr> <td>172.31.127.28</td> <td>00:CO:89:03:69:90</td> <td>40223632</td> <td>Setup30_2400 annexB</td> <td>Telindus 2401 ADSL Annex B</td> </tr> <tr> <td>172.31.127.32</td> <td>00:CO:89:03:88:CF</td> <td>40231631</td> <td>bert_1_1431CesSerial</td> <td>Telindus 1033 Router</td> </tr> <tr> <td>172.31.127.41</td> <td>00:CO:89:03:87:A0</td> <td>40243616</td> <td>1431frf_management</td> <td>Telindus 1031 Router</td> </tr> <tr> <td>172.31.127.33</td> <td>00:CO:89:0F:38:10</td> <td>40997392</td> <td>bert_2_1431CesSerial</td> <td>Telindus 1033 Router</td> </tr> <tr> <td>172.31.127.52</td> <td>00:CO:89:03:87:AD</td> <td>40243629</td> <td>setup 25 1030 management line 13-24</td> <td>Telindus 1031 Router</td> </tr> <tr> <td>172.31.127.50</td> <td>00:CO:89:03:87:9B</td> <td>40243611</td> <td>Setup 16 management 1030 and 1431 of line1&2, line3</td> <td>Telindus 1031 Router</td> </tr> <tr> <td>172.31.127.16</td> <td>00:CO:89:03:11:0E</td> <td>40200974</td> <td>t1034 for management of regression setups</td> <td>Telindus 1034 Router</td> </tr> <tr> <td>172.31.127.31</td> <td>00:CO:89:03:11:30</td> <td>40201008</td> <td>1431AtmSwitching_management</td> <td>Telindus 1035 Orchid</td> </tr> <tr> <td>172.31.127.46</td> <td>00:CO:89:03:87:99</td> <td>40243609</td> <td>Setup 16 management 1431 and 1421 of line4, line14, and line15</td> <td>Telindus 1031 Router</td> </tr> <tr> <td>172.31.127.40</td> <td>00:CO:89:03:32:D3</td> <td>40209619</td> <td>bert_2_1431CesG703</td> <td>Telindus 1032 Router</td> </tr> <tr> <td>172.31.127.39</td> <td>00:CO:89:03:32:C0</td> <td>40209600</td> <td>bert_1_1431CesG703</td> <td>Telindus 1032 Router</td> </tr> <tr> <td>172.31.127.53</td> <td>00:CO:89:03:11:0C</td> <td>40200972</td> <td>Setup 38 Tls 1033 Management IpSec Routers</td> <td>Telindus 1033 Router</td> </tr> <tr> <td>172.31.127.45</td> <td>00:CO:89:03:87:A9</td> <td>40243625</td> <td>setup 31 management</td> <td>Telindus 1031 Router</td> </tr> <tr> <td>172.31.127.34</td> <td>00:CO:89:03:11:0F</td> <td>40200975</td> <td>setup30 management ISDN test setup</td> <td>Telindus 1034 Router</td> </tr> <tr> <td>172.31.127.65</td> <td>00:CO:89:03:AE:EE</td> <td>40241390</td> <td>Setup 23 Management Interface to 2421 Bottom over linePair1</td> <td>Telindus 1421 SHDSL ATM Router</td> </tr> <tr> <td>1.0.36.17</td> <td>00:CO:89:10:88:94</td> <td>41083540</td> <td>router1424wan</td> <td>router1424 SHDSL-4P 2ETH-4P HWA RTC 64M</td> </tr> <tr> <td>1.0.33.2</td> <td>00:CO:89:0E:9C:6E</td> <td>40957550</td> <td>telindus142xshdsl_Left</td> <td>Telindus 1423 SHDSL-2P 2ETH-4P 2ISDN-BRI HWA RTC</td> </tr> <tr> <td>1.0.9.2</td> <td>00:CO:89:03:23:78</td> <td>40205688</td> <td>telindus103xfrf_Left</td> <td>Telindus 1032 Router</td> </tr> <tr> <td>1.0.36.1</td> <td>00:CO:89:03:23:8C</td> <td>40205708</td> <td>telindus103xmfrf_Left</td> <td>Telindus 1032 Router</td> </tr> <tr> <td>1.0.21.2</td> <td>00:CO:89:0E:D8:02</td> <td>40973570</td> <td>telindus142xshdsl_Left</td> <td>Telindus 1421 SHDSL ATM Router 2P</td> </tr> </tbody> </table> </div> <p>It is possible to connect to one of the devices in the window by selecting it, and clicking <i>Connect</i>. Then, another window will appear in which a username and password have to be filled in to access the selected device.</p> <ul style="list-style-type: none"> If there is a device in the network that does not have an IP address, it will also be shown in the list. To access that device, select it, and click the <i>Connect</i> button. Then, the user will be asked which IP address he wants to assign to that device. <hr/> <p> Remarks</p> <ul style="list-style-type: none"> Note that this IP address is assigned temporarily; it is not saved in the configuration of the device, and only used for the initial connection (this means that if you boot the device, it will be lost). A definite IP address still has to be configured on the device. The IP address given here must be in the same subnet as the PC. 	IP Address	Mac Address	Serial Number	SysName	SysDescription	1.0.18.202	00:CO:89:08:11:91	40528785	dut_1_1431CesG703	Telindus 1431 SHDSL ATM Router 2P		00:CO:89:0F:65:2C	41008940		CPE 1432 SHDSL ATM Router 2P	1.0.4.206	00:CO:89:08:11:8E	40528782	atmSwitching_1431_Left	Telindus 1431 SHDSL ATM Router 2P	1.0.27.206	00:CO:89:08:11:5F	40528735	telindus1431frf_dut_1	Telindus 1431 SHDSL ATM Router 2P	1.0.6.253	00:CO:89:03:87:96	40243606		Telindus 1031 Router	1.0.30.210	00:CO:89:0E:5E:C2	40941762	bert_1_1432CesSerial	Telindus 1033 Router	1.0.4.202	00:CO:89:03:8A:04	40231940	atmSwitching_1031_Left	Telindus 1031 Router	1.0.15.202	00:CO:89:08:11:8B	40528779	dut_1_1431CesSerial	Telindus 1431 SHDSL ATM Router 2P	1.0.27.202	00:CO:89:03:87:77	40231287	telindus1431frf_bert_1	Telindus 1032 Router	172.31.127.35	00:CO:89:03:11:33	40201011	Setup30_2400 shdsl	Telindus 2423	172.31.127.20	00:CO:89:03:86:87	40243335	setup 26 errortester for ces on alcatel	Telindus 1032 Router	172.31.127.55	00:CO:89:03:4D:A5	40216485	setup10_1061_octE1_PPP_4E1_top	Telindus 1061	172.31.127.28	00:CO:89:03:69:90	40223632	Setup30_2400 annexB	Telindus 2401 ADSL Annex B	172.31.127.32	00:CO:89:03:88:CF	40231631	bert_1_1431CesSerial	Telindus 1033 Router	172.31.127.41	00:CO:89:03:87:A0	40243616	1431frf_management	Telindus 1031 Router	172.31.127.33	00:CO:89:0F:38:10	40997392	bert_2_1431CesSerial	Telindus 1033 Router	172.31.127.52	00:CO:89:03:87:AD	40243629	setup 25 1030 management line 13-24	Telindus 1031 Router	172.31.127.50	00:CO:89:03:87:9B	40243611	Setup 16 management 1030 and 1431 of line1&2, line3	Telindus 1031 Router	172.31.127.16	00:CO:89:03:11:0E	40200974	t1034 for management of regression setups	Telindus 1034 Router	172.31.127.31	00:CO:89:03:11:30	40201008	1431AtmSwitching_management	Telindus 1035 Orchid	172.31.127.46	00:CO:89:03:87:99	40243609	Setup 16 management 1431 and 1421 of line4, line14, and line15	Telindus 1031 Router	172.31.127.40	00:CO:89:03:32:D3	40209619	bert_2_1431CesG703	Telindus 1032 Router	172.31.127.39	00:CO:89:03:32:C0	40209600	bert_1_1431CesG703	Telindus 1032 Router	172.31.127.53	00:CO:89:03:11:0C	40200972	Setup 38 Tls 1033 Management IpSec Routers	Telindus 1033 Router	172.31.127.45	00:CO:89:03:87:A9	40243625	setup 31 management	Telindus 1031 Router	172.31.127.34	00:CO:89:03:11:0F	40200975	setup30 management ISDN test setup	Telindus 1034 Router	172.31.127.65	00:CO:89:03:AE:EE	40241390	Setup 23 Management Interface to 2421 Bottom over linePair1	Telindus 1421 SHDSL ATM Router	1.0.36.17	00:CO:89:10:88:94	41083540	router1424wan	router1424 SHDSL-4P 2ETH-4P HWA RTC 64M	1.0.33.2	00:CO:89:0E:9C:6E	40957550	telindus142xshdsl_Left	Telindus 1423 SHDSL-2P 2ETH-4P 2ISDN-BRI HWA RTC	1.0.9.2	00:CO:89:03:23:78	40205688	telindus103xfrf_Left	Telindus 1032 Router	1.0.36.1	00:CO:89:03:23:8C	40205708	telindus103xmfrf_Left	Telindus 1032 Router	1.0.21.2	00:CO:89:0E:D8:02	40973570	telindus142xshdsl_Left	Telindus 1421 SHDSL ATM Router 2P
IP Address	Mac Address	Serial Number	SysName	SysDescription																																																																																																																																																																		
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1.2 Introducing the management terminology

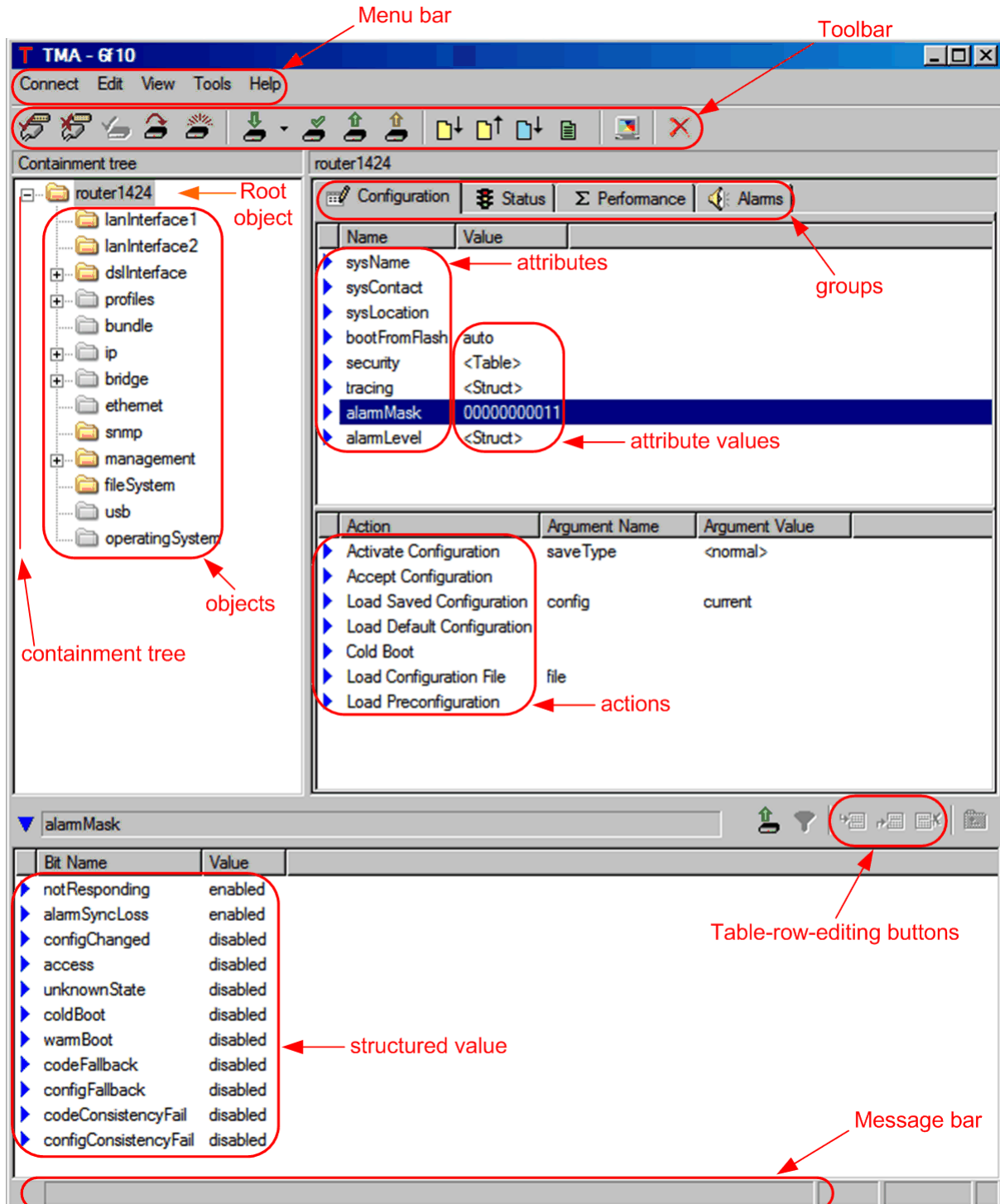
This section briefly introduces the terminology concerning the management of a TDRE device. It explains terms such as containment tree, group, object, attribute, value and action. It also gives a short description of the buttons in the toolbar, and the buttons that can be used to edit tables.

The following gives an overview of this section:

- [1.2.1 - Graphical representation of the containment tree on page 17](#)
- [1.2.2 - Containment tree terminology on page 18](#)
- [1.2.3 - Toolbar on page 20](#)
- [1.2.4 - Symbols on page 23](#)
- [1.2.5 - Numeric separators on page 24](#)

1.2.1 Graphical representation of the containment tree

The most comprehensible graphical representation of the containment tree is given in TMA. The following figure depicts the TMA window displaying a containment tree:





Refer to [1.2.2 - Containment tree terminology on page 18](#) for an explanation of the terms associated with the containment tree.

1.2.2 Containment tree terminology

Refer to [1.2.1 - Graphical representation of the containment tree on page 17](#) for a figure of a containment tree.

The following table explains the terminology associated with the containment tree:

Term	Description
containment tree	<p>The containment tree represents the hierarchical structure of the TDRE device. It is composed of a number of objects that are ordered in a tree. This tree resembles a Windows directory structure:</p> <ul style="list-style-type: none"> • it is also a levelled structure, with nodes which can be expanded or reduced. • the containment tree objects can be compared with file folders. • the objects contain attributes like file folders contain files.
object	<p>An object represents a physical interface, an application or a combination of both. Each object has its own set of attributes.</p> <p>The top level of the containment tree is referred to as <i>root object</i>.</p>
parent and child object	<p>Some objects are not present in the containment tree by default. If you want to use the features associated with such an object, then you have to add the object first.</p> <p>You always add an object under another object. The object you add is called the child object. The object under which you add this child object is called the parent object.</p> <p>Objects which you can add are also often referred to as <i>user-instantiatable objects</i>.</p> <p>Refer to 1.3.4 - How to add an object to the containment tree? on page 30 for an explanation of how to add objects to the containment tree.</p>
index name	<p>Of some objects more than one object is present in the containment tree. The different objects are distinguished from one another by adding an index. E.g. linePair[1] and linePair[2], where 1 and 2 are the indexes. Also child objects are given an index (by the user when adding the object).</p> <p>An index name is also often referred to as <i>index</i>, <i>instance value</i> or <i>instance name</i>.</p>
attribute	<p>An attribute is a parameter related to a certain object. It has a certain <i>default</i> value, which can be changed by the user.</p> <p>To set one or more attributes (back) to their default value, proceed as follows:</p> <ul style="list-style-type: none"> - Select the attribute(s). - Click the right mouse button, and select <i>Set To Default</i>, or ... - Press F12 on the keyboard.
value	<p>An attribute has a certain value which is ...</p> <ul style="list-style-type: none"> • changeable in case of a configuration attribute (provided you have write access). • read only in case of a status, performance and alarm attribute.















Term	Description
structured value	<p>Some attribute values contain underlying values: a structured value. These values are displayed in the structured value window. If an attribute contains structured values, then a bit string, <Table> or <Struct> is displayed after the attribute:</p> <ul style="list-style-type: none"> • a bit string is a series of bits. The value of each of these bits can be 0 or 1, on or off, enabled or disabled. • a table contains columns and rows. Each column contains an attribute (which, on its turn, can have a structured value). Each row is an entry in the table. • a structure contains columns but only one row. A structure could be compared to an attribute which contains several “sub-attributes”. <p>A structured value is also often referred to as <i>bit string</i>, <i>table</i>, <i>structure</i> or <i>complex value</i>.</p>
element	<p>An element is an attribute within a structured value. In other words, they could be considered as “sub-attributes”.</p>
group	<p>Groups assemble a set of attributes related by functionality. There are four groups in TMA, which correspond with the four tabs in the attribute window:</p> <ul style="list-style-type: none"> • <i>Configuration</i>. Here, all attributes can be found to actually configure the device. • <i>Status</i>. Here, all attributes can be found that provide status information about the device, whether interfaces are up or down, whether certain features have been enabled or not, etc... • <i>Performance</i>. Here, all kinds of performance counters can be found. They provide performance information about the device and its interfaces. • <i>Alarms</i>. Here, the alarm information can be found. In case of issues or problems, a device will or can generate alarms. In the <i>Alarms</i> group, detailed information can be found about which alarms have been activated, on which level.
action	<p>A group in combination with an object may have actions assigned to them. These actions are displayed in the action window.</p>
message bar	<p>The message bar at the bottom of the TMA window displays certain messages while the device is in operation, for instance when TMA is connecting to the device, when importing or exporting the configuration, ...</p> <p>When the following error message appears, <i>error no response</i>, it means that the connection to the device was lost. Click the <i>reconnect to current device</i> button in the toolbar:</p>  <p>Note that it is also possible to reconnect to the current device by:</p> <ul style="list-style-type: none"> • pressing [CTRL + R] on the keyboard. • clicking <i>Connect</i> on the menu bar, and then selecting <i>Reconnect</i>. <hr/> <p> The notification <i>The connection to the network was lost. Please reconnect</i> that appears when changing the encapsulation of a TDRE device, is normal behaviour.</p>

1.2.3 Toolbar

Buttons

The following figure gives a short description of the buttons on the toolbar:



	Connect to a device or network
	Disconnect from current device or network
	Select another device on current network
	Select / reselect a device
	Auto-discovery button (*)
	Send all attributes to device (<i>activate configuration</i>), with possible options: <i>normal, immediate, waitUserAck</i> (*)
	Accept configuration (*)
	Retrieve all attributes from device
	Retrieve current attributes from device (*)
	Export / import data to / from file
	GetAll button (*)
	Show current configuration (*)
	Subsystem picture
	Cancel all pending requests

Buttons marked with (*) are explained in more detail next.

Auto-discovery button



Refer to [1.1.6 - Connecting with TMA using automatic detection on page 14](#) for a detailed explanation of this button.

Send all attributes to device button



This button matches with the Activate Configuration action.

If you click this button, the editable non-active configuration becomes the active configuration. When clicking the arrow pointing down, on the right of the button, three choices can be made:

Choice	Description
normal	<ul style="list-style-type: none"> This is the default mode. This means that the configuration is activated, but there is a <i>fallback mechanism</i>: <ul style="list-style-type: none"> the configuration will only be saved if the device runs stable for 2 minutes. If the device crashes 2 times within the next 2 minutes after activating, it will automatically fall back to the saved configuration. Note that, upon each crash, the 2 minutes counter is reset. If the power of the device is removed 3 times within the next 2 minutes after activating, it will lose the non-saved configuration. After a Cold Boot, the device will never lose the non-saved configuration.
immediate	This means that the configuration is immediately activated and saved to the start-up configuration at the same time, and that no fallback is possible.
waitUserAck	<ul style="list-style-type: none"> In this mode, the device will first wait during the time specified in the action, for an acknowledgement (ack) from the user to save the configuration; this time must be set as soon as this mode is selected. If the acknowledgement from the user does not come within the specified time period, the saved configuration (also referred to as <i>previous</i>) replaces the active configuration. In this mode, the <i>fallback mechanism</i> as described above for the <i>normal</i> mode, is also functioning. <p>The user can acknowledge in three ways:</p> <ul style="list-style-type: none"> The first possibility is to use the action Accept Configuration. In this case, the normal action is activated and the device must run stable for two minutes, or else the previous configuration is reactivated. The second possibility is to use the action Activate configuration with option immediate. In this case, the configuration is accepted, and no fallback is possible. The third possibility is to use the Accept Configuration button described next.

Accept configuration button



This button matches with the Accept Configuration action.

This action must be executed when the Activate Configuration action, described above, is run with the option waitUserAck. Clicking this button will activate the configuration.

After running this action, the device must run stable for two minutes, or else the previous configuration is reactivated.

Retrieve current attributes from device button



If you click this button, the attributes currently displayed in the TMA window are retrieved from the device, i.e. only the attributes of the selected group/object are updated. This can be very important for Web TMA as you cannot use the keyboard shortcut F5 in your web browser.

GetAll button



When clicking this button, a *.CLI* file is created and saved locally (the filename can be chosen by the user).

In this file, beside the configuration, status, performance and alarm attributes, also in-depth debugging information is saved. This information is not visible in the TMA window, but provides additional information about the condition and settings of the device.

In case of issues or problems in the network, this file can be sent to the CSO department for a thorough analysis of the settings of the device.

It provides the CSO department with:

- the type of the device the customer is using (version/hardware type)
- software version used
- how the device is currently behaving in its environment.

Also refer to [1.7 - Full export of device parameters via the GetAll function on page 42](#).

Show current configuration button








When clicking this button, the current configuration of the device can be saved in *.CLI* format. Also refer to [1.5 - Showing and saving the current configuration on page 37](#).

1.2.4 Symbols


As can be seen in [1.2.1 - Graphical representation of the containment tree on page 17](#), attributes, values, actions and structured values, are preceded by a coloured symbol; in this figure, a blue triangle.


This symbol is an indication of the status of those different elements. It can have four possible shapes: a blue triangle, a blue exclamation mark, a red triangle and an orange triangle.


These symbols mean the following:


Symbol	Explanation
	This means that the element can be modified by the user.
	<p>This means that the element has been modified by the user, but not yet activated.</p> <p>As soon as all attributes have been sent to the device, the blue exclamation mark changes back to a blue triangle.</p> <p>To send and activate the new configuration, press the <i>Send all attributes to device</i> button: .</p>
	This means that the element is read-only, and cannot be modified by the user.
	This means that TMA is communicating with the device; information is being sent to, or retrieved from, the device.

This is illustrated in the following example:

Name	Value
 name	lan_1

 The *name* configuration attribute has value *lan_1*.

Name	Value
 name	lan01

 The *name* attribute has been changed to *lan01*; this change has not been sent to the device yet.

Name	Value
 name	lan01

 The change has been sent to the device.

1.2.5 Numeric separators

To improve readability for (large) numbers, TMA inserts numeric separators by default.

The symbols that are actually used as separators, a *Digit Grouping Symbol* and *Decimal Symbol*, are taken over from the PC settings, as set in *Regional and Language Options*.

This feature can be switched *on* or *off* as follows:

Step	Action																				
1	<p>Click <i>Tools</i> on the menu bar, and then select <i>Options...</i> This brings up the <i>TMA - options</i> window.</p> <p>Note that the <i>TMA - options</i> window can also be activated by pressing [CTRL + O] on the keyboard.</p>																				
2	<p>By default, in the <i>Display</i> tab, the <i>Use system settings</i> box under <i>Numeric separators</i> is ticked:</p> <div data-bbox="927 786 1377 1155" style="float: right; border: 1px solid gray; padding: 5px;"> </div> <p>When the box is ticked, the numeric separators are inserted in the numbers, in between the thousands, and as comma in case of decimal numbers; which improves readability.</p> <p>This is illustrated in the following example:</p> <ul style="list-style-type: none"> When the box is ticked, a number is displayed as follows: <div data-bbox="357 1375 695 1541" style="border: 1px solid gray; padding: 5px;"> <p style="text-align: center; color: red;">Digit Grouping Symbol</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Name</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>ifInOctets</td> <td>35,370,866,917</td> </tr> <tr> <td>ifInUcastPkts</td> <td>354,178,193</td> </tr> <tr> <td>ifInNUcastPkts</td> <td>4,817,395</td> </tr> <tr> <td>ifInDiscards</td> <td>393,274</td> </tr> </tbody> </table> </div> <ul style="list-style-type: none"> When the box is not ticked, a number is displayed as follows: <div data-bbox="357 1615 695 1756" style="border: 1px solid gray; padding: 5px;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Name</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>ifInOctets</td> <td>35279000865</td> </tr> <tr> <td>ifInUcastPkts</td> <td>3532030444</td> </tr> <tr> <td>ifInNUcastPkts</td> <td>4804595</td> </tr> <tr> <td>ifInDiscards</td> <td>391910</td> </tr> </tbody> </table> </div>	Name	Value	ifInOctets	35,370,866,917	ifInUcastPkts	354,178,193	ifInNUcastPkts	4,817,395	ifInDiscards	393,274	Name	Value	ifInOctets	35279000865	ifInUcastPkts	3532030444	ifInNUcastPkts	4804595	ifInDiscards	391910
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ifInOctets	35279000865																				
ifInUcastPkts	3532030444																				
ifInNUcastPkts	4804595																				
ifInDiscards	391910																				

1.3 Configuring a TDRE device

This section explains:


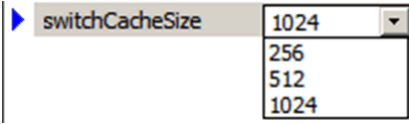
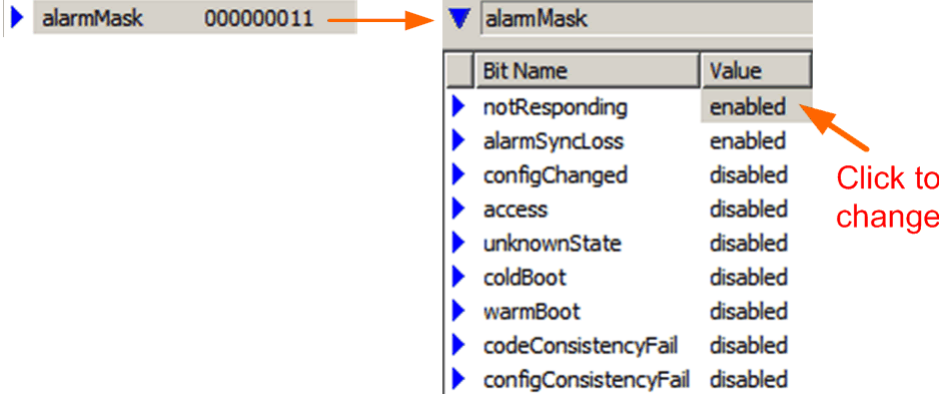
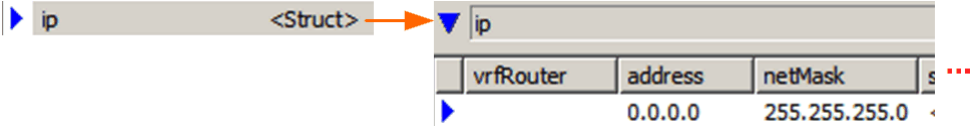
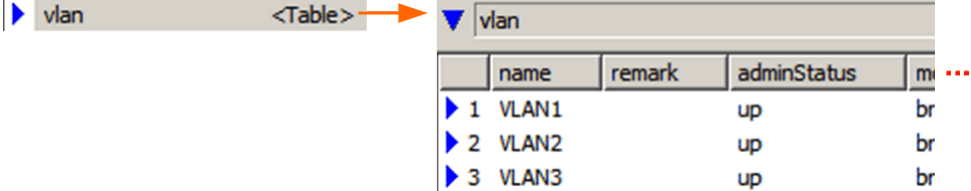
- how to handle the different types of configuration attributes, and their values.
- how to add an object to the containment tree
- how to refer to an object
- how to activate the configuration

The following gives an overview of this section:

- [1.3.1 - Configuration attributes and their values on page 26](#)
- [1.3.2 - Editing tables on page 27](#)
- [1.3.3 - Selecting a choice on page 28](#)
- [1.3.4 - How to add an object to the containment tree? on page 30](#)
- [1.3.5 - Referring to an added object on page 31](#)
- [1.3.6 - Activating the configuration on page 31](#)
- [1.3.7 - Retrieving information from the device on page 32](#)

1.3.1 Configuration attributes and their values




The following table gives an overview of different types of configuration attributes, and how their value can be changed:

Attribute type	Description
Directly editable	<p>This means that the value can be edited immediately. When you click on it, a cursor appears and you can enter your value.</p> 
Drop-down box	<p>This means that the value can be selected from a drop-down box. In this example, any of the three values can be selected.</p> 
Bit string	<p>This means that the values of an attribute can be changed by enabling or disabling a series of bits.</p> <p>When clicking on the attribute, the values of the bits appear at the bottom of the TMA window, in the <i>structured value</i> window.</p> <p>The values of the bits can be changed by clicking on the <i>Value</i> field.</p> 
Structure	<p>The <Struct> string indicates that there are underlying values. These underlying values are visible in the <i>structured value</i> window. They are located next to each other, i.e. in one row.</p> 
Table	<p>The <Table> string indicates that there are underlying values. These underlying values are visible in the <i>structured value</i> window. They are placed in rows and columns; the next section explains how rows can be added by the user.</p> 

1.3.2 Editing tables

Some configuration attributes have a table as structured value. In this table, rows can be added or deleted. For the location of the buttons in the TMA window, refer to [1.2.1 - Graphical representation of the containment tree on page 17](#), they are indicated there as *table-row-editing* buttons.

The buttons are:

Button	Name	Function
	Insert row before	<ul style="list-style-type: none"> To add a row if the table is still empty, just press the <i>Insert row before</i> button. To insert a row before an existing row, select the entire row by clicking on the blue triangle in front of it, and press the <i>Insert row before</i> button.
	Insert row after	<ul style="list-style-type: none"> To add a row if the table is still empty, just press the <i>Insert row after</i> button. To insert a row after an existing row, select the entire row by clicking on the blue triangle in front of it, and press the <i>Insert row after</i> button.
	Delete row	To delete a row, select the entire row by clicking on the blue triangle in front of it, and press the <i>Delete row</i> button.

1.3.3 Selecting a choice

A choice value is a value which has two or more possible value types. In other words, you first have to make a *pre-selection* which determines the *value type* (e.g. direct editable, drop-down box, bit string, structured value, etc.) and then you can edit the value itself.

Changing between the value types, can be done by clicking the right mouse button, and selecting *Set To This Choice Type*.

This is illustrated in the following example:

- The lanInterface1 object contains a ports attribute, which is a table with 4 rows. The table contains an adapter element:

	adapter	crossover	portGroup
1	<autoNegotiate> <Struct>	auto	1
2	<autoNegotiate> <Struct>	auto	1
3	<autoNegotiate> <Struct>	auto	1
4	<autoNegotiate> <Struct>	auto	1

- By clicking on the little arrow in the right corner of the adapter title field, both choices appear in two columns.
- The adapter element can either be set to autoNegotiate or fixed, in each of the four rows of the table. For each row, do this by clicking the right mouse button on the field of the autoNegotiate or fixed column, and selecting *Set To This Choice Type*:

	adapter autoNegotiate	adapter fixed	crossover	portGroup
1	<Struct>	-		
2	<Struct>	-		
3	<Struct>	-		
4	<Struct>	-		

	adapter autoNegotiate	adapter fixed	crossover	portGroup
1	-	10Mb/halfDuplex	auto	1
2	<Struct>	-	auto	1
3	<Struct>	-	auto	1
4	<Struct>	-	auto	1

- Once this choice has been made, the autoNegotiate or fixed elements themselves can be configured: the autoNegotiate element is a structure which has its own elements to configure; the fixed element is a drop-down box with 4 possible choices.

- In the figure below, the adapter element of the first row of the ports table, is set to a fixed value of 100Mb/fullDuplex:

The figure illustrates the configuration of the first row in a ports table. The table has four columns: 'adapter autoNegotiate', 'adapter fixed', 'crossover', and 'portGroup'. The first row is expanded to show a dropdown menu for the 'adapter fixed' column, with '100Mb/fullDuplex' selected. A red arrow points from this selection to the bottom screenshot, where the 'adapter fixed' column for the first row is now set to '100Mb/fullDuplex'.

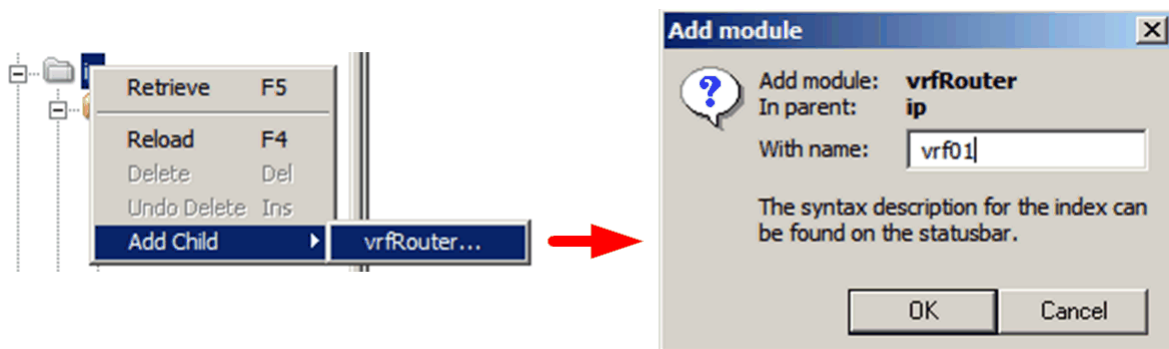
	adapter autoNegotiate	adapter fixed	crossover	portGroup
1	-	100Mb/fullDuplex		1
2	<Struct>	-	auto	1
3	<Struct>	-	auto	1
4	<Struct>	-	auto	1

1.3.4 How to add an object to the containment tree?

The section shows you how to add an object to the containment tree. The following section, [1.3.5 - Referring to an added object on page 31](#), shows you how you can “refer” to this added object somewhere else in the containment tree.

Adding an object in TMA

Step	Action
1	Right click on the parent object, e.g. ip. ⇒A pop-up menu appears.
2	In the pop-up menu, select <i>Add Child...</i> and select the child object you want to add, vrfRouter... ⇒A pop-up window appears.
3	In the pop-up window, type the index name (i.e. the instance value) for the child object (e.g. vrf01) and click on <i>OK</i> . ⇒The new child object is created, vrfRouter[vrf01]. All this is shown in the figure below.



Other examples of *user-instantiatable objects* are:

- ip/router/ospf => area[name]
- ip/router => routingFilter[name]
- bridge => vpnBridgeGroup[name]
- bridge => accessList[name]
- profiles/policy/priority => priorityPolicy[name]
- profiles/policy/traffic => trafficPolicy[name]

1.3.5 Referring to an added object

What is referring to an added object?

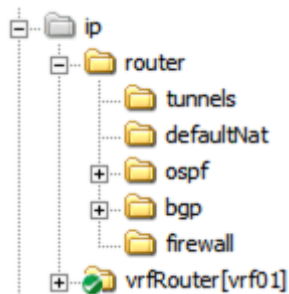
If at a certain place in the containment tree you want to apply the function associated with an object you added, then you have to refer to this object.

How to refer to an added object?

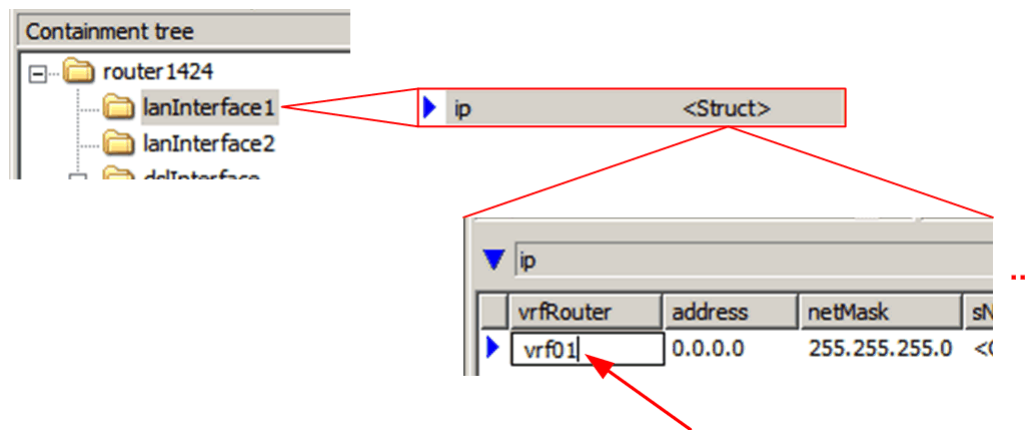
Some attributes allow you to enter the index name (i.e. the instance value you assigned to the object) of an added object. By doing so, the function associated with this object is applied there.

Example

Suppose you create a vrfRouter object with the index name vrf01. The containment tree then looks as follows:




Now, if you want to assign LAN interface 1 to the VRF Router, enter the index name of the VRF Router in the ip/vrfRouter element of LAN interface 1. This is illustrated in the following figure:



1.3.6 Activating the configuration

When the configuration of a device has been changed, these changes have to be sent to the device.

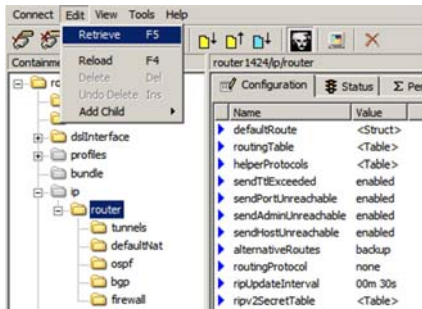
Do this by pressing the *Send all attributes to device* button: .

This sends the new configuration to the device, and subsequently activates it.

1.3.7 Retrieving information from the device

To retrieve all the attribute values of the currently selected object of the device, use one of the following possibilities:

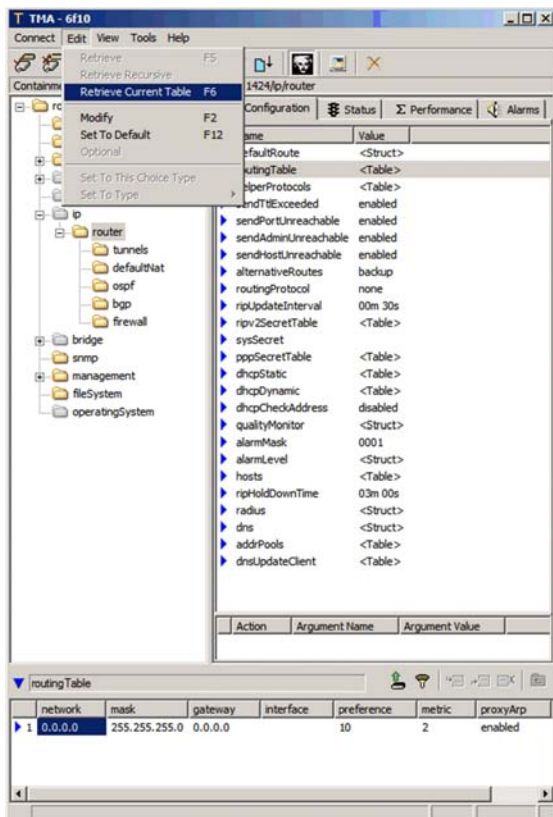
- Press *F5* on the keyboard.
- Click *Edit* on the menu bar, and then select *Retrieve*.
- Click the right mouse button on the object in the containment tree, and click *Retrieve*.



To retrieve the table which is currently shown in the *structured value* window, select one field of the table and use one of the following possibilities:

- Press *F6* on the keyboard.
- Click *Edit* on the menu bar, and then select *Retrieve Current Table*.
- Click the right mouse button on the selected field of the table, and click *Retrieve Current Table*.

Only this table will be refreshed, not any other table that might exist under the currently selected object.



1.4 Upgrading the device software

Each TDRE device has a flash memory containing firmware. This firmware gives the devices their features, and evolves continuously as new features are added or changed.

This section explains how to download new firmware to a TDRE device.



The explanation here assumes that a connection between the computer running TMA and the TDRE device is already present. Section [1.1 - Connecting to a TDRE device with TMA on page 3](#) explains how to connect to a device.

The device software can be upgraded in two ways:

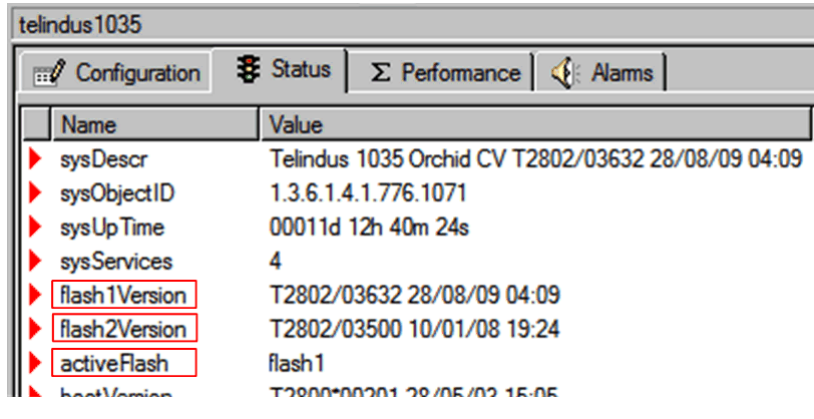
- by using the Tools => Upgrade command; in this way, the upgrade happens, to a large extent, automatically.
- by using the Tools => Download (Put) command; this method requires more manual input from the user.

Both methods are described in the following sections:

- [1.4.1 - Using the Upgrade command on page 34](#)
- [1.4.2 - Using the Download \(Put\) command on page 35](#)

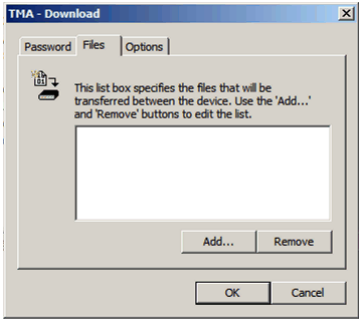
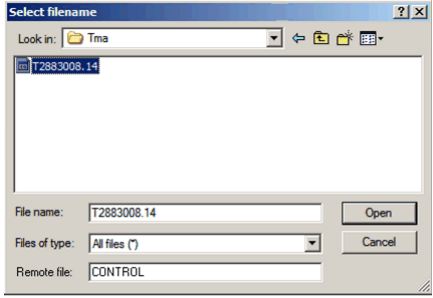

1.4.1 Using the *Upgrade* command

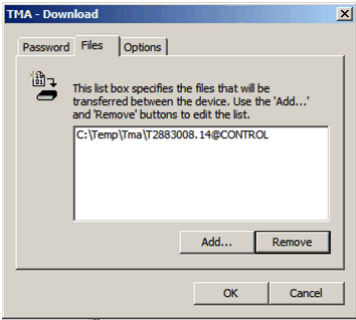
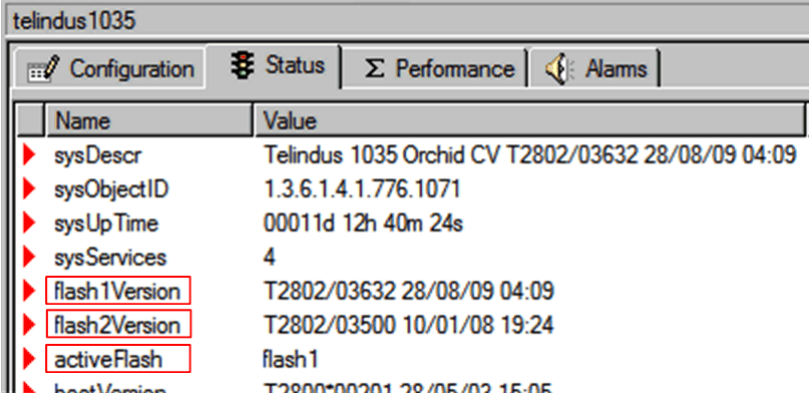
To upgrade the firmware, proceed as follows:

Step	Action																		
1	Click <i>Tools</i> on the menu bar, and then select <i>Upgrade</i> .																		
2	In the window that appears, go to the location where the firmware file is saved.																		
3	Select the firmware file, and click <i>Open</i> . ⇒A window appears which shows the download progress.																		
4	After the firmware has been downloaded, a Cold Boot of the device is required in order to activate the downloaded firmware. Do this by right-clicking the Cold Boot action (located in the <i>Actions window</i> of the configuration attributes of the root object) and selecting <i>Execute</i> .																		
5	To verify if the firmware download was successful, check the following status attributes of the root object of the device: <ul style="list-style-type: none"> flash1Version. This attribute displays the code and version of the application software stored as CONTROL1. flash2Version. This attribute displays the code and version of the application software stored as CONTROL2. activeFlash. This attribute shows which flash memory bank is currently in use. <p>The following figure shows an example of these attributes:</p>  <table border="1"> <thead> <tr> <th>Name</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>sysDescr</td> <td>Telindus 1035 Orchid CV T2802/03632 28/08/09 04:09</td> </tr> <tr> <td>sysObjectID</td> <td>1.3.6.1.4.1.776.1071</td> </tr> <tr> <td>sysUpTime</td> <td>00011d 12h 40m 24s</td> </tr> <tr> <td>sysServices</td> <td>4</td> </tr> <tr> <td>flash1Version</td> <td>T2802/03632 28/08/09 04:09</td> </tr> <tr> <td>flash2Version</td> <td>T2802/03500 10/01/08 19:24</td> </tr> <tr> <td>activeFlash</td> <td>flash1</td> </tr> <tr> <td>bootVersion</td> <td>T2000*00001 28/05/03 15:05</td> </tr> </tbody> </table>	Name	Value	sysDescr	Telindus 1035 Orchid CV T2802/03632 28/08/09 04:09	sysObjectID	1.3.6.1.4.1.776.1071	sysUpTime	00011d 12h 40m 24s	sysServices	4	flash1Version	T2802/03632 28/08/09 04:09	flash2Version	T2802/03500 10/01/08 19:24	activeFlash	flash1	bootVersion	T2000*00001 28/05/03 15:05
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activeFlash	flash1																		
bootVersion	T2000*00001 28/05/03 15:05																		

1.4.2 Using the *Download (Put)* command

To upgrade the firmware, proceed as follows:

Step	Action
1	<p>Click <i>Tools</i> on the menu bar, and then select <i>Download (Put)...</i> This brings up the <i>TMA - download</i> window.</p> <p>Note that the <i>TMA - download</i> window can also be activated by pressing [CTRL + W] on the keyboard.</p>
2	<p>In the <i>TMA - Download</i> window, the <i>Files</i> tab is automatically selected; press the <i>Add ...</i> button.</p> <p>⇒The <i>Select filename</i> window appears.</p> 
3	<p>In the <i>Select filename</i> window:</p> <ol style="list-style-type: none"> 1. Select a firmware file you want to download. 2. In the <i>Remote file</i> field, type CONTROL to download the firmware <i>into the non-active flash bank</i>. 3. Press the <i>Open</i> button.  <p>-----</p> <p> Note that:</p> <ul style="list-style-type: none"> • you can only download firmware into a non-active flash memory bank. The activeFlash status attribute of the root object shows which flash memory bank is currently in use. • it is important, when typing CONTROL, to use <i>capital</i> letters; do not use small letters. <p>-----</p>

Step	Action
4	<p>When the <i>TMA - Download</i> window reappears, press the <i>OK</i> button.</p> <p>⇒A window appears which shows the download progress.</p>  <p>Remark</p> <p>As can be seen in the <i>TMA - Download</i> window here, the path of the firmware file is shown, followed by <i>@CONTROL</i>. This is added automatically. Always make sure that this is the case before clicking <i>OK</i>. If <i>@CONTROL</i> has not been added, it is a sign that something is not right.</p>
5	<p>After the firmware has been downloaded, a Cold Boot of the device is required in order to activate the downloaded firmware.</p> <p>Do this by right-clicking the Cold Boot action (located in the <i>Actions window</i> of the configuration attributes of the root object) and selecting <i>Execute</i>.</p>
6	<p>To verify if the firmware download was successful, check the following status attributes of the root object of the device:</p> <ul style="list-style-type: none"> flash1Version. This attribute displays the code and version of the application software stored as CONTROL1. flash2Version. This attribute displays the code and version of the application software stored as CONTROL2. activeFlash. This attribute shows which flash memory bank is currently in use. <p>The following figure shows an example of these attributes:</p> 

1.5 Showing and saving the current configuration

This section explains how the current configuration of a device can be viewed, and also saved in *.CLI* format.

Selecting a viewer

The user can set how the current configuration is viewed, either with TMA 's internal editor, or by using the editor configured on the pc. Proceed as follows:

Step	Action
1	<p>Click <i>Tools</i> on the menu bar, and then select <i>Options...</i> This brings up the <i>TMA - options</i> window.</p> <p>Note that the <i>TMA - options</i> window can also be activated by pressing [<i>CTRL + O</i>] on the keyboard.</p>
2	<p>In the <i>Misc</i> tab, the choice can be made between <i>Use TMA 's internal editor</i> and <i>Use the system configured editor</i>.</p> <div data-bbox="354 920 1053 1422" style="border: 1px solid black; padding: 5px;"> <p>The screenshot shows the 'TMA - Options' dialog box with the 'Misc' tab selected. Under 'Miscellaneous settings', there are two checked options: 'Check for unsert changes when disconnecting' and 'Auto negotiate HighSpeed for serial connections'. The 'Max speed' is set to 115200. Under 'CSV Separator', 'As configured in Control Panel' is selected. Under 'When viewing files:', 'Use TMA's internal editor' is selected. A red arrow points from the text 'Choose editor' to the 'Use the system configured editor' radio button.</p> </div> <p>By default, TMA 's internal editor is selected.</p>

Showing the current configuration

In the toolbar, a *Show current configuration* button is present:



Clicking this button brings up the *config.cli* window:

```
action "Load Default Configuration"
SET
{
  LIST
  {
    security =
    {
      [a] = {}
      [a] = {}
      [a] = {}
      [a] = {}
      [a] = {}
      [a] =
      {
        password = "t"
        accessRights =
        {
          readAccess = on
          writeAccess = off
          securityAccess = off
          fileSystemAccess = off
          testAccess = off
        }
      }
    }
  }
  SELECT lanInterface1
  {
    LIST
    {
      mode = "routing"
    }
  }
  SELECT dslInterface
  {
    SELECT channel["wan_1"]
    {
      SELECT atm
```

This window shows the current configuration of the device, in this case with TMA 's internal editor.

Saving the current configuration

When using TMA 's internal editor to view the configuration, there is a *Save As...* button at the bottom of the window.

Clicking this button brings up another window, in which a location can be chosen to save the *config.cli* file.

Note that *config.cli* is the default file name, any other name can be given to the file at the moment of saving.

1.6 Exporting and importing device parameters

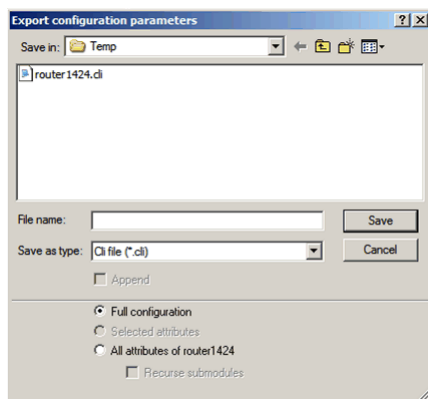
This section explains how the configuration, status, performance or alarm parameters of a device can be exported in different file types, and how a configuration file can be imported.

1.6.1 Exporting the parameters of a device

In the toolbar, an *Export data to file* button is present:



When clicking this button, configuration, status, performance or alarm information can be exported to a file. It brings up the *Export configuration parameters* window:



The window above shows the *Export configuration parameters* window.

When exporting status, performance and alarms parameters, the procedure is identical to what is described here in this paragraph for the *Export configuration parameters* window. The title at the top of the window will say *Export status parameters*, *Export performance parameters* or *Export alarm parameters* respectively.

Note that the *Export configuration parameters* window can also be activated by:

- pressing [CTRL + E] on the keyboard.
- clicking *Tools* on the menu bar, and then selecting *Export*.

File type

Data can be exported in 4 different formats:

File type	can be used to export	Description
.CMS .CLI	configuration attributes	<p>When exporting to a <i>.CMS</i> or <i>.CLI</i> file, this export file can be used to import the configuration in the same device again at a later stage, or in another device. So this allows you to distribute configuration files amongst several devices.</p> <p>Some advantages of using a <i>.CLI</i> file are:</p> <ul style="list-style-type: none"> • you can still edit the file using the CLI syntax. • you can use the file when running CLI on the devices themselves (through a terminal or Telnet session). • you can use the file when running TMA CLI on your pc.
.TXT	configuration, status, performance, alarm attributes	Configuration, status performance and alarm attributes can be exported to a plain text file. This is particularly interesting for documentation purposes.
.CSV	performance attributes	Performance attributes can be exported to a text file. This is particularly interesting for documentation purposes. The CSV file is a comma separated value file and can easily be imported in a spreadsheet or database for further processing.

Other export options

Beside the file type, other export options are the following, they can be selected at the bottom of the *Export configuration parameters* window:

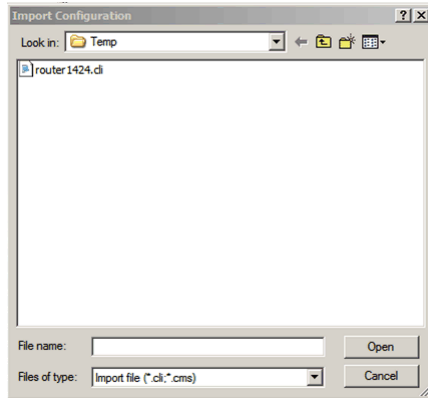
Option	Description
Append	Tick this box if you want to add the data you are about to export to an existing export file. The new export data is inserted at the end of the file.
Full configuration	<p>This selection is only available when you export the configuration attributes.</p> <p>When exporting to a ...</p> <ul style="list-style-type: none"> • <i>.TXT</i> file, tick this box if you want to export all the configuration attributes instead of only the configuration attributes of the currently selected object. • <i>.CMS</i> or <i>.CLI</i> file, things are a bit different than for a <i>TXT</i> file. In this case, a load default configuration action is inserted at the beginning of the file. Then, only those attributes which have a different value than the default value are stored in the file. This results in a compact file.
Selected attributes	Tick this selection if you only want to export the attributes you selected in the attribute window.
All attributes of ...	Select this option to export the configuration attributes of one object in the TMA tree only.
Rekurs submodules	Tick this selection if you want to export the attributes of the currently selected object and the attributes of the underlying objects.

1.6.2 Importing a configuration file

In the toolbar, an *Import data from file* button is present:



When clicking this button, a configuration file can be imported; it brings up the *Import configuration* window:



Either a *.CLI* file or a *.CMS* file can be imported.

Note that the *Import configuration* window can also be activated by:

- pressing **[CTRL + I]** on the keyboard.
- clicking *Tools* on the menu bar, and then selecting *Import*.




The import of a *.CLI* or *.CMS* file is only supported for *.CLI* or *.CMS* files that were exported before with TMA.

1.7 Full export of device parameters via the *GetAll* function

This section explains how to do a full export of all device parameters via the *GetAll* function. This is important in case of issues or problems in the network: a *.CLI* file can be created and sent to the CSO department for a thorough analysis of the settings of the device.

GetAll button



In the toolbar, a *GetAll* button is present: . When clicking this button, a *.CLI* file is created and saved locally (the filename can be chosen by the user).

With this button, a full export of all device parameters is done:

- full configuration group
- full status group
- full performance group
- full alarm group

Beside the configuration, status, performance and alarm attributes, also in-depth debugging information is saved. This information is not visible in the TMA window, but provides additional information about the condition and settings of the device:

- current SNMP information from all objects
- current debug information from all objects
- startUpLogfile; this provides info from the last boot sequences with possible crash info.

In case of issues

In case of issues or problems in the network, this file can be sent to the CSO department for a thorough analysis of the settings of the device.

It provides the CSO department with:

- the type of the device the customer is using (version/hardware type)
- software version used
- how the device is currently behaving in its environment.

Other ways to activate the *GetAll* function

The *GetAll* function can also be activated by:

- pressing [CTRL + G] on the keyboard.
- clicking *Tools* on the menu bar, and then selecting *GetAll...*

1.8 Using the file system of a device

This section explains how files that are stored on the file system of a device, can be viewed, saved locally, or deleted.

Part of the flash memory of a TDRE device is organised as a file system, in which a number of files are stored. The fileList attribute shows all the files that are present on the file system.

File system

To view the files that are stored on the file system of a device, refer to the fileList attribute under the fileSystem object.

The following figure shows the location of the fileList attribute, and the files that are stored on the file system:

The screenshot shows the TMA software interface. On the left is a 'Containment tree' with a folder structure including 'telindus1061', 'lanInterface1', 'lanInterface2', 'eth4P', 'bundle', 'profiles', 'pppoE', 'ip', 'router', 'bridge', 'bridgeGroup', 'accessList[fsdfs]', 'snmp', 'management', 'fileSystem', 'operatingSystem', and 'alarmContacts'. The 'fileSystem' folder is selected. The main panel shows the 'telindus1061/fileSystem' configuration with tabs for 'Configuration', 'Status', 'Performance', and 'Alarms'. The 'fileList' attribute is expanded, showing a table of files. Below this, a detailed table lists the files with columns for name, length, date, and time. A red box highlights the file list table with an arrow pointing to it, labeled 'Files on the file system'.

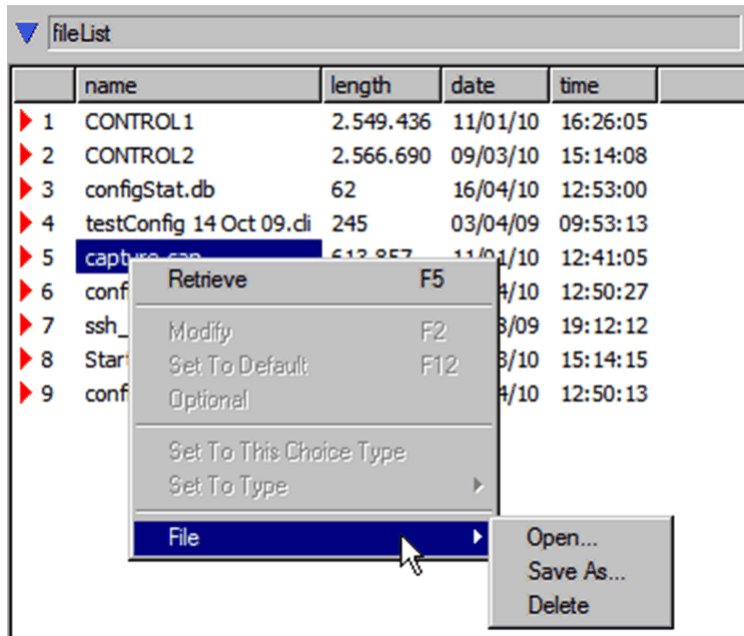
Name	Value
fileList	<Table>
freeSpace (bytes)	59.572.224
status	ready
corruptBlocks	0
sshKeyFingerprint	
capture	<Struct>

Action	Argument Name	Argument Value
Delete File	deleteFileName	
Rename File	renameFileNames	<Struct>
generateSshKey	sshKeyLength	1024
saveCapture	captureFileName	capture.cap
startIntfCapture	settings	<Struct>
stopIntfCapture		

	name	length	date	time
1	CONTROL1	2.549.436	11/01/10	16:26:05
2	CONTROL2	2.566.690	09/03/10	15:14:08
3	configStat.db	62	16/04/10	12:53:00
4	testConfig 14 Oct 09.di	245	03/04/09	09:53:13
5	capture.cap	613.857	11/01/10	12:41:05
6	config1.db	1.640	16/04/10	12:50:27
7	ssh_rsa.pem	963	25/08/09	19:12:12
8	StartupLogFile	62.506	09/03/10	15:14:15
9	config2.db	1.638	16/04/10	12:50:13

Opening, saving or deleting a file

By right-clicking one of the files, a window appears in which *File* can be selected; this gives three choices:



These are:

- *Open*. Select this option to open the selected file.
If the file has been opened with TMA 's internal editor, there is also the possibility to save the file by clicking the *Save As* button at the bottom of the window in which the file opened.
The file can be closed again by clicking the *Close* button at the bottom of the window.
- *Save As*. Select this option to save the selected file immediately, without it being opened first.
- *Delete*. Select this option to delete the file from the file system of the device.



The user can set how the file is opened, either with TMA 's internal editor, or by using the editor configured on the pc; refer to [Selecting a viewer on page 37](#), this section explains how to select either one of them.