



THE POWER OF BUILDING AND
MANAGING NETWORKS

Topology View



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1 General

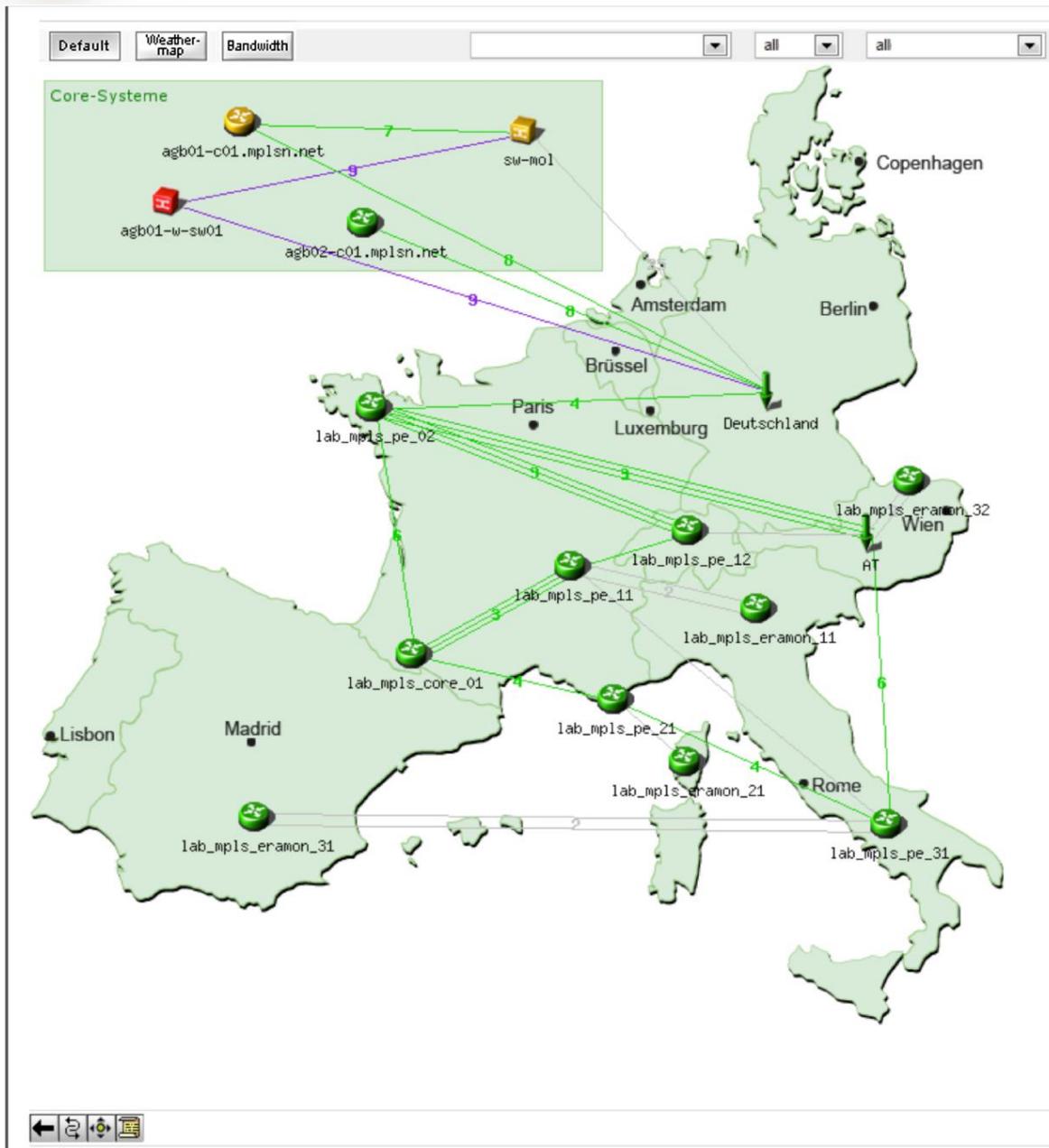
ERAMON's Topology View has been developed to provide ISPs, carriers and large enterprise customers with a flexible tool to create and display a clear view of their WAN infrastructure. All based upon pure HTML.

In addition to the automatic geographic positioning, "Add device" the function offers the possibility to position devices manually. Depending on their individual authorization, users can define and edit graphical views or just have them displayed.

On these maps the devices are shown as symbols (ITU standard) and are assigned a background color depending on their status (ITU weighting). You also have the option to replace these symbols with customized ones.

Since submaps can also be generated, multiple hierarchy levels are available (such as country – state – district). This is also applicable for topology levels.

In general, it is also possible to make use of very diverse maps, such as country or city maps or building/plant layouts. Images without geographical context to the display of topologies can also be used.



Icons and Color Coding

Definition

		Router
		Switch
		Devices (misc.; if the devices cannot be identified either as a router or as a switch, e.g. server, firewall).
	green	0% of ports are down



	yellow	< 20% of ports are down
	red	> 20% of ports are down
	gray	passive: 0 ports are set to managed
	blue	0 ports are set to managed, but reachable by ping.
	violet	Ports relevant to the connection are down, possibly due to a ping error.
		These icons show that the sublevels also contain devices that cannot be reached via SNMP. The status of these devices (green, yellow, red) cannot be included in the status display, since the number of ports is unknown and this could therefore create the wrong impression.
Icons and color coding when splitting locations		
		Color coding as for submaps.
Where necessary, links which form a link from or to the devices on the submaps, can be displayed on the submaps within the display.		
		Color coding as for devices.



a) Basic Ping Status

Icon	Color	Status display for the SAT that polls the Device
	blue	SAT unavailable
	red	Device unreachable by ping
	green	Device reachable by ping

b) Basis Ping-/Port-Status

Router: 	blue	The SAT assigned to the device is currently unavailable – the NMS cannot make a statement regarding the device status.
Switches: 	green	100% of ports are up
Devices (Sonstiges) 	gelb	< 20% of ports are down.
	red	>20 of ports are down.
	gray	The device is passive – 0 ports are set to managed. Ports can be set to managed via: Devices > Device Info > Port Info.
	violet	Device cannot be pinged

Icons and color coding for links

- Gray link: One of the ports of a connection is currently not being monitored by ERAMON.
- Green link: Both ports of the connection are currently operational.
- Red link: At least one of the ports of the connection is not operational (down).
- Blue link: In the event of scheduled maintenance tasks on at least one of the two ports of the link, the link will be highlighted in blue.

2 Adding devices

When adding devices to a map, the user has the choice between a manual and an automated geographic positioning (ZIP code, GEO data).

If there is more than one device at a location, a submap is generated automatically and all devices at that particular location included in this submap.

Circuits (if monitored through ERAMON) and their status (ITU weighting) are shown automatically; by clicking on the circuit symbol the corresponding details and statistics can be retrieved.



Details

Settings		Current Display	
Time Interval	Previous 24 hours	Time Interval	Previous 24 hours
From	2014-07-09 12:45:29	From	2014-07-09 12:45:29
To	2014-07-10 12:45:29	To	2014-07-10 12:45:29
Go directly to	1 Day		

Go

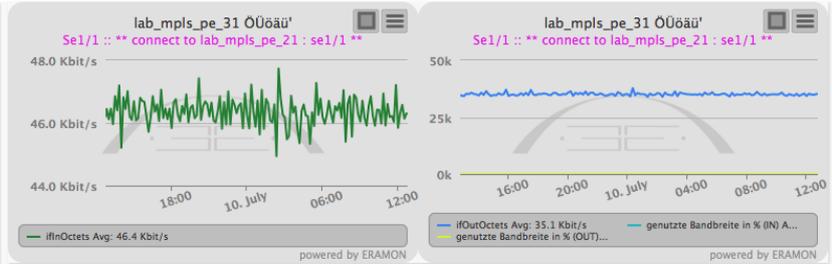
A-End

Device Data

Device ID	14
Device Name	lab_mpls_pe_31
Location	ERAMON LABS GmbH
Device IP	172.17.0.50
Device Type	cisco7206VXR

Port Data

Port Name	Se1/1
Status (A/O/L)	● ● ●
Port Description	** connect to lab_mpls_pe_21 : se1/1 **
Port Type	propPointToPointSerial
Bandwidth	1,544 Mbps
Slot/Module	/
Remote Station	L3: lab_mpls_pe_21 (Se1/1) L3: lab_mpls_pe_21 (Se1/1) CDP: lab_mpls_pe_21 (Se1/1)



(PDF-Export)

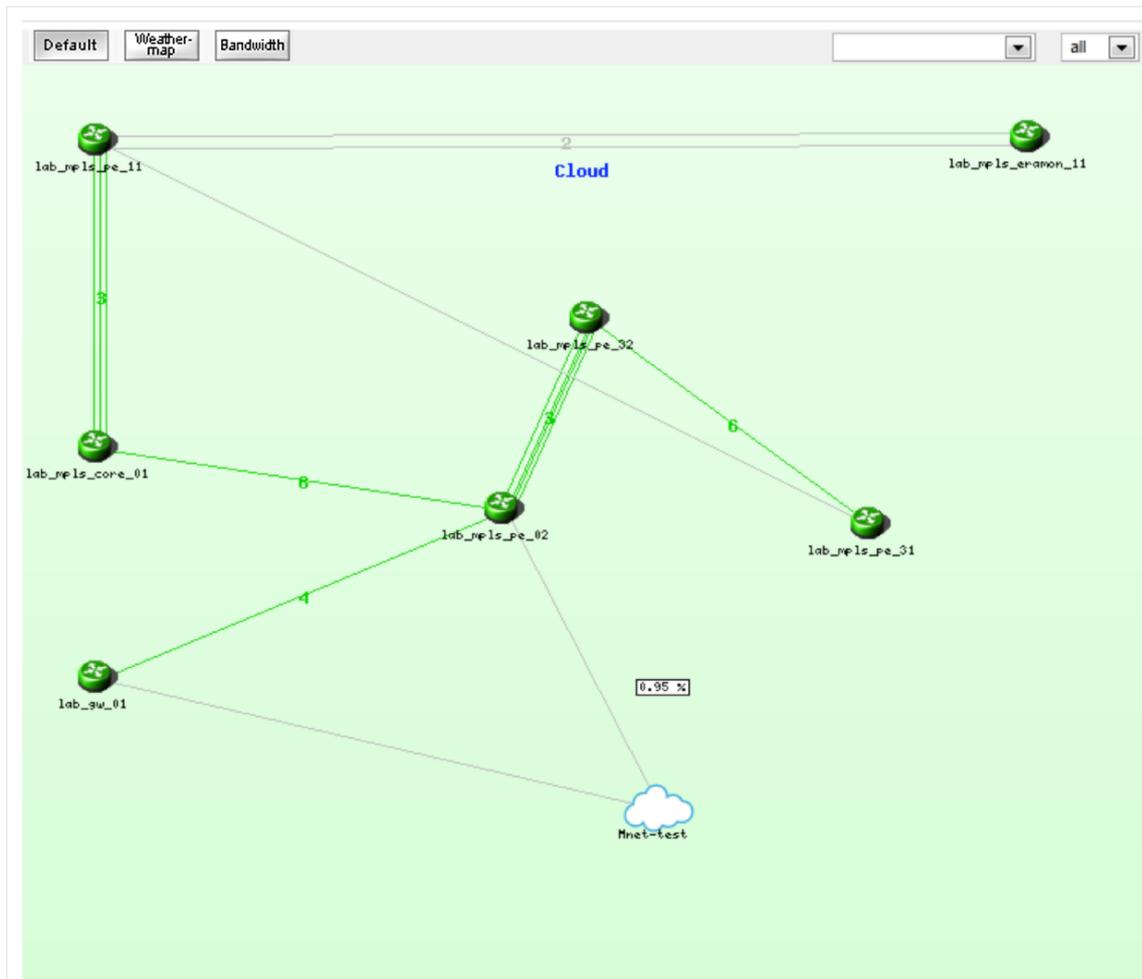
Details of Statistical Data

OID Description	Polling Status	Latest Polling	Latest Value	Polling Interval	
ifInOctets	●	2014-07-10 12:40:26	46.3 Kbit/s	10 Minute(s)	
ifOutOctets	●	2014-07-10 12:40:35	35.18 Kbit/s	10 Minute(s)	
genutzte Bandbreite in % (IN)	●	2014-07-10 12:40:35	3	10 Minute(s)	
genutzte Bandbreite in % (OUT)	●	2014-07-10 12:40:35	2.28	10 Minute(s)	
Traffic eingehend	●	2014-07-10 12:40:35	500.61 MB	10 Minute(s)	
Traffic ausgehend	●	2014-07-10 12:40:35	379.08 MB	10 Minute(s)	

If there are circuits between devices that are pooled in submaps, this is shown accordingly between the submaps.



It is possible to create so-called "Provider Clouds" in ERAMON. These provider clouds enable a display through weathermaps; for which the system refers to the complementary measurement of the remote station.



3 Moving Devices

You can specify and set the positions for devices and submaps to your individual requirements.

4 Zooming of maps

On topology maps you can zoom into particular areas of the map.

5 Topology-View Mode

In default view Topology View allows you to switch to other views by clicking on one of the following buttons:



Topology View (default)



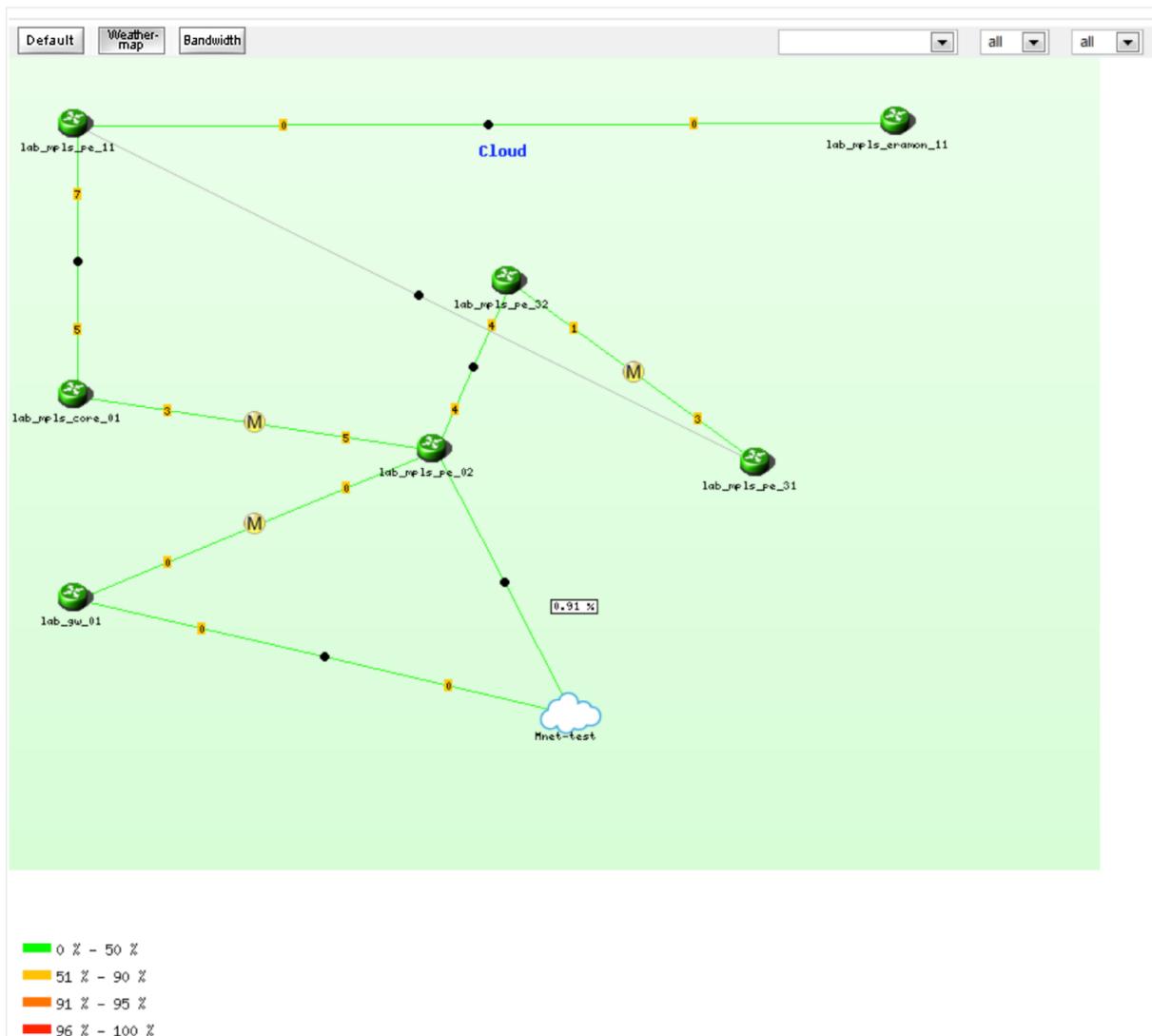
Weather-map

Weathermap (EPM Data required)

The connections are displayed accordingly to the current bandwidth usage (%). The colors are pre-defined, but can be adjusted individually for each map.

Bandwidth

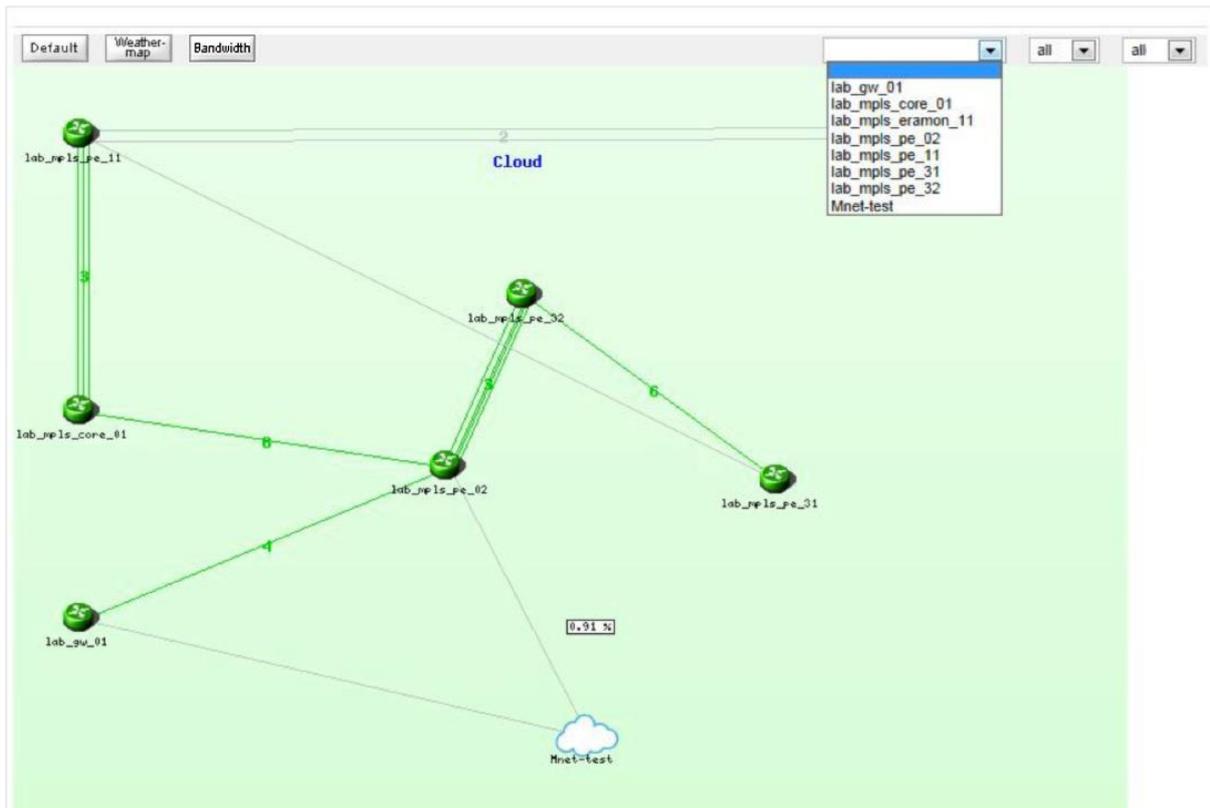
In this mode the thickness of the displayed line relates to the connection's bandwidth.





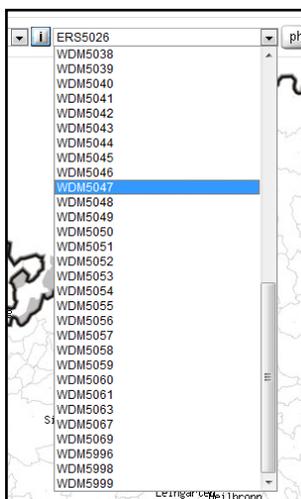
6 Device Search

The "Device Search" option will find devices on a map. A drop-down-box lists all devices on the map including all devices in submaps. By selecting a device in this box, the respective icon in the map is marked (device or submap icon).



7 Connection Search/Selection

Specific connections on a map can be selected by using the "Connection Search/Selection" option.





If there is a reference entry in the Carrier Management circuit database, the data can be displayed by clicking on the button.

8 Connection view mode

Connections can be displayed both as logical and as physical. The physical view shows all segments of the connections that make up and realize the logical connection.



Display of the logical connection between the A- and B-End.



Display of the physical connection the A- and B-End, including all segments connections that make up the connection.

8.1 Color Codes for the Links (Standard/Topology View Mode)

Example

	Physical View			Logical View	
	A	B	C		
All ports up					
Device B cannot be pinged					
All reachable ports up					
Device B and C unreachable					
Port Device A down					
Device B down					
Ports Device A und C down					
Device A & C cannot be pinged					
Device B all Ports up					

For the logical view, any existing circuits are run through on a physical level and color-coded according to their status. If no connections exist on the physical level for the logical connection, then the relevant port status would determine the connection status.

When clicking on "Connections", different display modes are available.

Single connections:

Logical without physical connection:

By clicking on the connection icon a popup window with detailed information is displayed.

Logical with physical connection:

By clicking on the connection icon the physical path of the connection is displayed.

Multiple connections:

By clicking on the "Multiple Connections" button a popup window with all involved connections opens up. From here detailed information about the individual connections can be retrieved. If physical paths exist, each path can be displayed by clicking on the "Maps" button.

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