

# TELCO MANAGER

SLA  
view

TECHNICAL DESCRIPTION

**Telcomanager** is a company specialized in the development of network management tools.

**Telcomanager's** products are distinguished by the technology used, their friendly features, and especially by their efficiency. Therefore, they reached success in companies representing various market segments,

Network problems such as slow applications, inability to read emails, downed phone lines, poor voice quality and Internet failures usually bring troubles for any user. In addition to work interruption, these inconveniences can also generate losses for the corporation. Performing a proper network management is an essential activity to ensure the continued operation and quality of the offered services.

The SLAview, a network monitoring management solution from Telecomanager, enables you to follow all the health levels of your network through a simple web interface. The network administrator, in most cases, can identify and anticipate the cause of a future problem.

Network parameters such as latency, packet loss, availability, jitters, errors, traffic and many others are easily collected, handled and analyzed. These can be used to plot historical graphics, in order to view the evolutionary behavior of an indicator and/or to set SLA parameters. All indicators can be set to trigger alarms at the time they reach non-compliance levels with the network quality.

The SLAview is a flexible and multi-vendor management solution that allows a simple and intuitive way to monitor a wide range of equipment and network metrics.

## Why use it?

### SLA Management

With the SLAview you can create the necessary formulas to monitor the quality of your network. Alarms can be applied and set to be triggered before a SLA breach will occur. The main objective is to anticipate the problem and provide a preemptive solution.

### Network behavior prediction

Knowing the current behavior of your network and its future tendencies becomes to any network administrator a fundamental pro-activity task. SLAview has enhanced features that make it possible to predict, based on historical analysis, what will happen in the future.

### Network Overview

The mapping from SLAview allows you to have a complete view of all indicators previously configured on the network.

### Flexibility / Multi-Vendor

With the advancement in technology, it's very common to find new and increasingly powerful equipment that are available in the market. SLAview has an advanced and flexible interface that allows you to easily configure the new equipment.

### Advanced Information

With the ability to create formulas for monitoring any kind of indicator, SLAview can virtually meet all types of your information needs and reports. Quickly and easily, it creates the most elaborated indicators that comply with your needs.

such as telecommunication operators, retail stores, banks, logistic companies, basic industries, content providers, among many others.

Whenever a network is an important part of everyday life, **Telcomanager's** products will make the difference.

## Appliance Solution

SLAview is an appliance with hardware and software perfectly integrated. It's a trustable and robust solution, with a low cost of installation and maintenance.

There is no need for Operational System installation or optimization, software installation, virus threats, lack of memory, database installation or even maintenance of all these components.

## Collection Devices

SLAview provides the following mechanisms to collect network information:

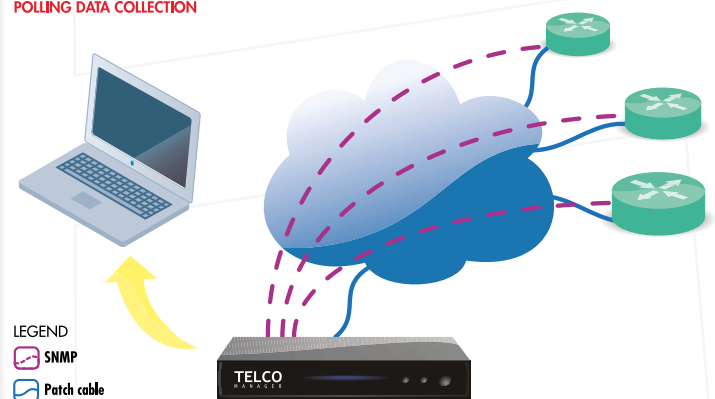
### SNMP Polling Data Collection

This device performs a data collection of many variables (OIDs) every 5 minutes, which are pre-configured on SLAview to be used with the indicator rules, while using the SNMP protocol.

SLAview has configured based rules that make it possible to create self-associations about which variables should be collected from a newly registered equipment. By employing these rules, SLAview can identify particular features of the equipment and automatically associate the variables that need to be collected, along with their indicators.

In regards to CISCO equipment, SLAview comes ready to perform the identification and mapping of the Class of Service variables (QoS) collected.

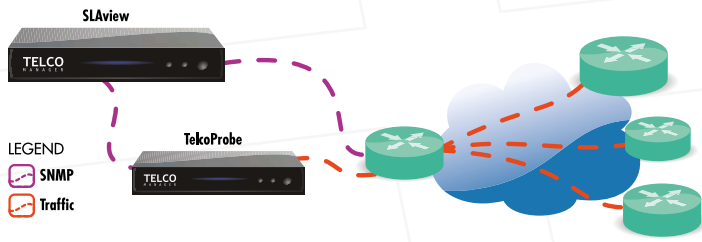
#### POLLING DATA COLLECTION



### Collecting Probe Data – CISCO IP SLA and TelcoProbe

The CISCO IP SLA probe (available only in CISCO equipment) allows you to collect point-to-point network information such as latency, jitter, packet loss and others. SLAview is ready not only to collect this information, but also to configure the collection in CISCO equipment through SSH or Telnet.

COLLECTING PROBE DATA – CISCO IP SLA AND TELCOPROBE



If it is not possible to use CISCO IP SLA for point-to-point network readings, Telcomanager offers its own probe as a solution, called TelcoProbe (all Telcomanager appliances can be configured as TelcoProbe). With TelcoProbe it's possible to run measurements of ICMP, HTTP, DNS, SSH, TCP and so on.

Online Collecting with Configured Polling (Online Custom Polling)

The collecting interval between 5 minutes often masks some types of problems. In thinking of this, we developed an Online Custom Polling which allows real time viewing of the behavior of any indicator, using collecting intervals in order of seconds (eg 10 seconds).

Receiving SNMP Traps

Equipment that has features to trigger alarms trough SNMP can use SLAview to manage these alerts. They will be mapped into the SLAview configuration infrastructure and then treated as a normal alarm with the same functionalities of a conventional alarm. Any type of SNMP trap can be configured / mapped in SLAview.

Provisioning

The SLAview has resources to make it possible to create provisioning scripts related to collecting, through command line, using SSH or Telnet protocols. Scripts can be made to configure CISCO IP SLA collection, flow export, TelcoProbe collection and any other possible configurations that can be performed via command line.

Alarms

SLAview can be configured to create alarms according to established settings by the network administrator. They can be simply defined by fixed or rated limits. More sophisticated settings can be expressed as formulas, combining several collected values. Alarms can be sent by SMS, email, console and SNMP traps.



Flexibility / Multi-vendor

Through an intuitive web interface, the network administrator can register any kind of indicator of any device with SNMP support. These indicators can be customized through formulas which can be adapted for the network administrator real needs.

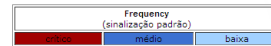
SLA Reports and Indicators

Advanced alarm report

Report name high bandwidth  
 Object type Mapped object  
 Manufacturer (null) (Regular expression, Case sensitive: Off)  
 Manufacturer type (null) (Regular expression, Case sensitive: Off)  
 Start time 01/05/2009  
 End time 05/05/2009  
 Alarms high input bandwidth  
 All groups No  
 Groups Performance alarm report  
 Line headers Device name, Alarm name  
 Column headers Alarm year, Alarm month, Alarm day

Total group objects for each alarm

	Alarm year		2009		2009		2009		2009		2009	
	Alarm month	Alarm day	05	01	05	02	05	03	05	04	05	05
Device name		Alarm name	Frequency	Frequency	Frequency	Frequency	Frequency	Frequency	Frequency	Frequency	Frequency	Frequency
Router-Atenas 1	high input bandwidth	2.083333	1.388889	-	-	8.680556	11.805556	14.930556	18.055556	21.180556	24.305556	27.430556
Router-Atenas 2	high input bandwidth	-	1.388889	-	-	8.680556	11.805556	14.930556	18.055556	21.180556	24.305556	27.430556
Router-Atlanta 2	high input bandwidth	0.694444	0.694444	-	-	5.902778	5.902778	5.902778	5.902778	5.902778	5.902778	5.902778
Router-Chicago 1	high input bandwidth	-	-	-	-	0.694444	-	-	-	-	-	0.347222
Router-Chicago 2	high input bandwidth	-	-	-	-	10.059444	12.847222	14.583333	14.583333	14.583333	14.583333	14.583333
Router-Internet 1	high input bandwidth	2.777778	2.777778	-	-	179.513889	181.944444	174.305556	174.305556	174.305556	174.305556	174.305556
Router-Internet 2	high input bandwidth	6.250000	5.208333	3.125000	-	8.680556	11.805556	14.930556	18.055556	21.180556	24.305556	27.430556
Router-Internet 3	high input bandwidth	-	-	-	-	8.680556	11.805556	14.930556	18.055556	21.180556	24.305556	27.430556
Router-Los Angeles 1	high input bandwidth	-	-	-	-	5.902778	1.736111	2.430556	2.430556	2.430556	2.430556	2.430556
Router-Los Angeles 2	high input bandwidth	0.694444	0.694444	-	-	21.180556	9.375000	4.166667	4.166667	4.166667	4.166667	4.166667
Router-Porto Alegre 1	high input bandwidth	0.694444	-	-	-	5.902778	10.905556	16.905556	21.905556	26.905556	31.905556	36.905556
Router-Porto Alegre 2	high input bandwidth	-	-	-	-	5.902778	38.194444	26.041667	26.041667	26.041667	26.041667	26.041667
Router-Tokio 1	high input bandwidth	-	0.694444	-	-	11.805556	14.930556	11.483333	11.483333	11.483333	11.483333	11.483333
Router-Tokio 2	high input bandwidth	-	-	1.041667	-	14.930556	13.541667	12.847222	12.847222	12.847222	12.847222	12.847222
Router-Toronto 1	high input bandwidth	0.694444	-	0.694444	-	9.027778	6.333333	15.277778	15.277778	15.277778	15.277778	15.277778
Router-Toronto 2	high input bandwidth	5.555556	-	-	-	5.555556	1.736111	5.902778	5.902778	5.902778	5.902778	5.902778



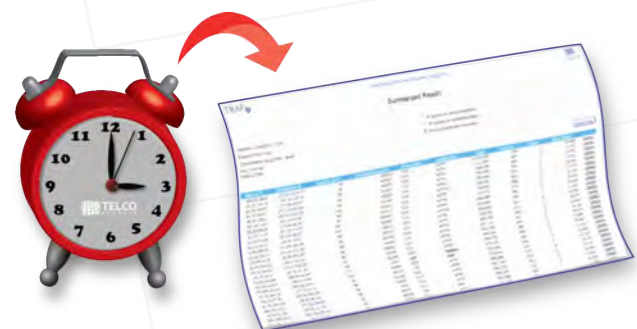
The system allows you the possibility to generate many types of reports. It's possible to make reports about any previously defined indicators in its configuration interface.

Advanced reports can be done by setting the lines and columns and also the aggregation type between them. These reports are widely used to calculate network SLA levels. Reports can be customized by the user and scheduled for a future periodic execution. SLAview can generate reports in HTML, CSV, TSV and PDF formats.

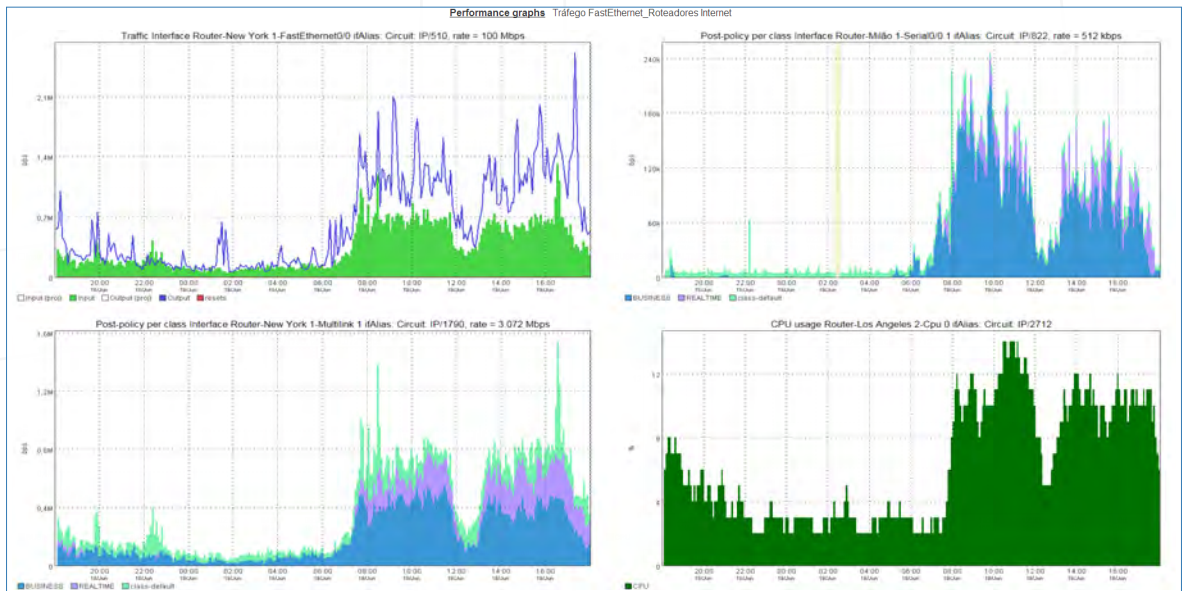
Scheduling Reports and Templates

SLAview allows you to schedule reports and sends notifications by email. All you have to do is save a template report with the scheduled time to send and its frequency. Thus, you can define a point of control for the quality process.

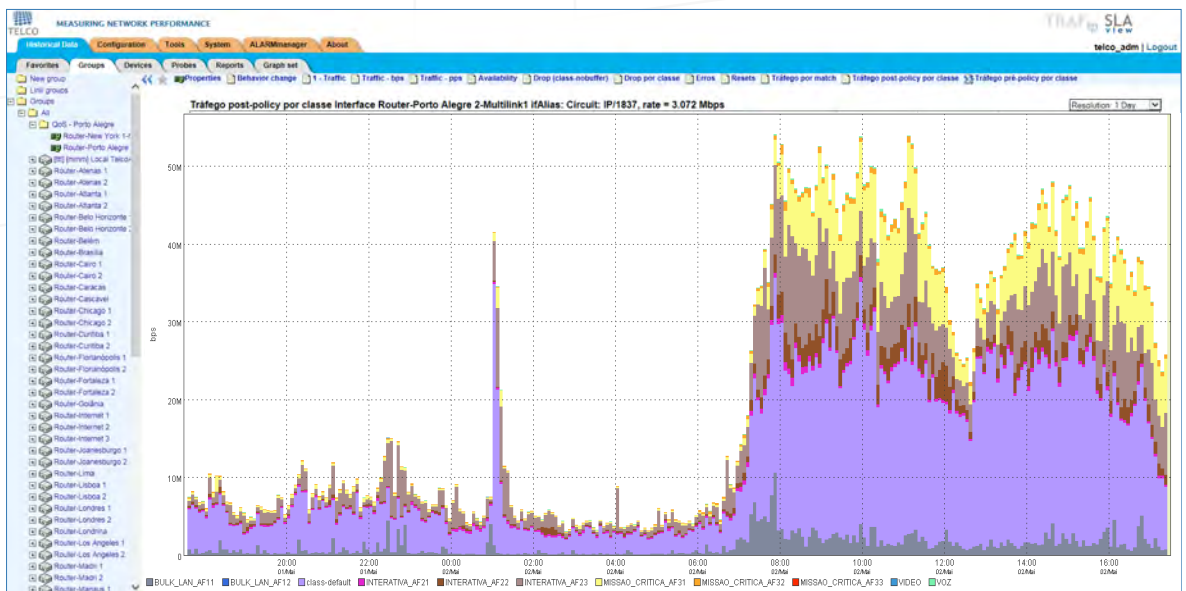
The scheduling eliminates the need of an operator for this activity, thus saving work time and avoiding errors on generating reports for this point of your quality control.



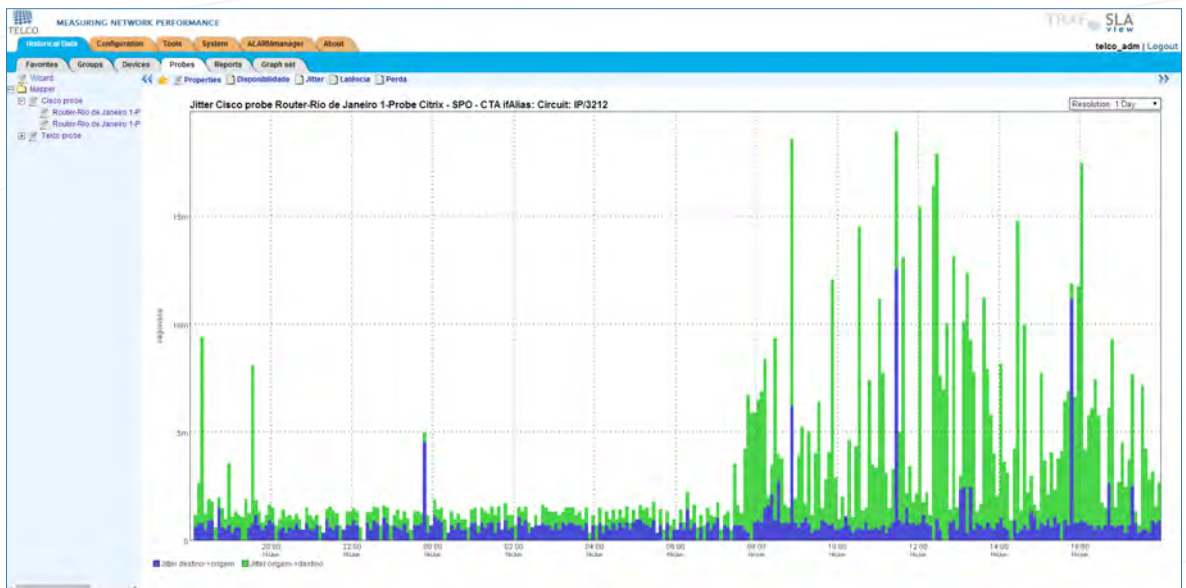
# Multiples graphics



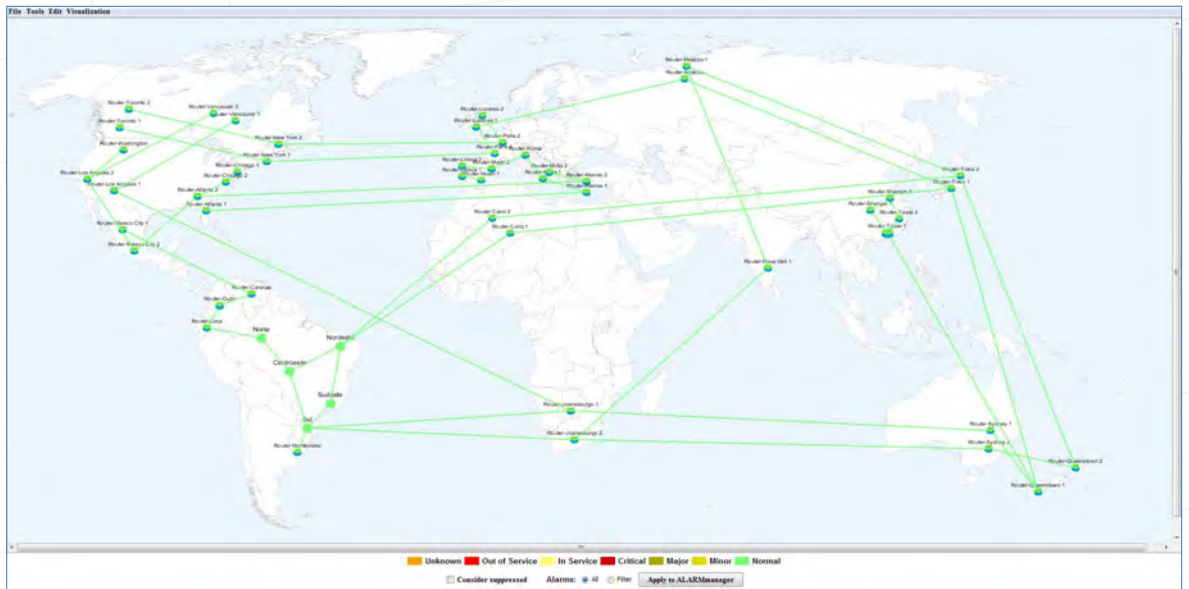
# Class of services



# Jitter



# Maps



# Advanced alarm reports

MEASURING NETWORK PERFORMANCE

Advanced alarm report

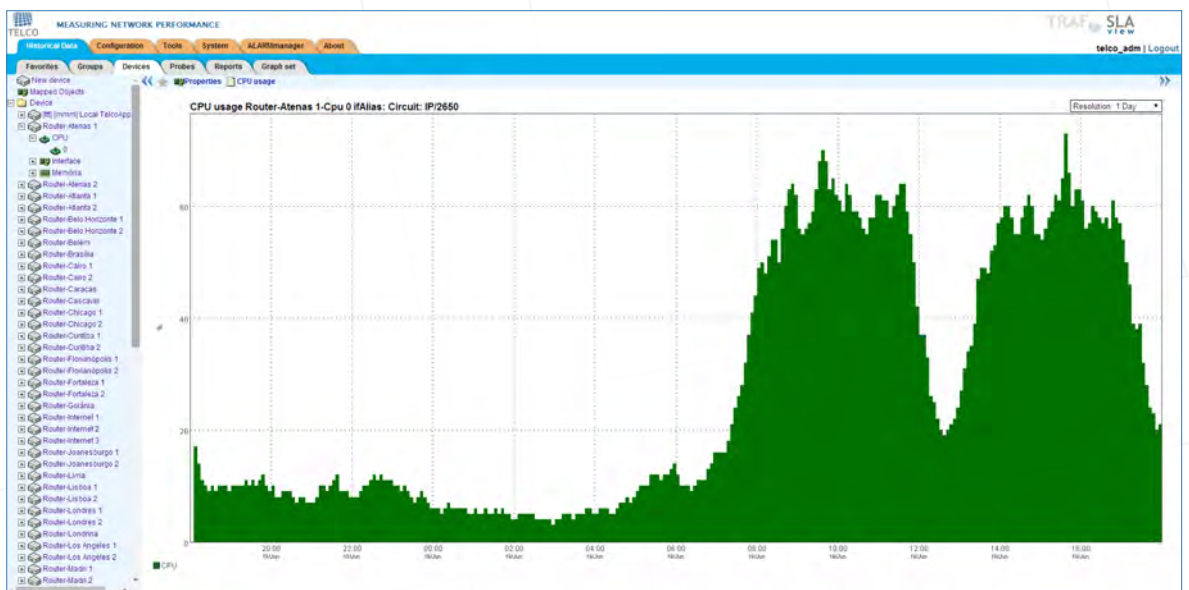
Report name: High bandwidth  
Object type: Stopped object  
Manufacturer: mult (Regular expression, Case sensitive: Off)  
Manufacturer type: mult (Regular expression, Case sensitive: Off)  
Start time: 21052009  
End time: 05052009  
Alarm: High input bandwidth  
Alarm ID: 161

Total group objects for each alarm:

Device name	Alarm name	2009		2008		2007		2006		2005	
		Alarms	Days	Alarms	Days	Alarms	Days	Alarms	Days	Alarms	Days
Router-Antonia 1	High input bandwidth	2,08332	11	1,38839	11	-	-	-	-	-	-
Router-Antonia 2	High input bandwidth	-	-	1,38839	11	-	-	-	-	-	-
Router-Atlanta 2	High input bandwidth	0,68444	3	0,68444	3	-	-	3,90278	5,90278	4,51393	4,51393
Router-Chicago 1	High input bandwidth	-	-	-	-	-	-	0,68444	-	0,34722	0,34722
Router-Chicago 2	High input bandwidth	-	-	-	-	-	-	10,86844	18,86732	14,86333	14,86333
Router-Internet 1	High input bandwidth	2,77778	2,77778	-	-	-	-	179,51389	181,84444	174,53556	174,53556
Router-Internet 2	High input bandwidth	6,29200	6,29200	3,20833	3,20833	-	-	-	-	-	-
Router-Internet 3	High input bandwidth	-	-	-	-	3,12500	-	-	-	-	-
Router-Los Angeles 1	High input bandwidth	-	-	-	-	-	-	6,40278	21,60556	11,40278	11,40278
Router-Porto Alegre 1	High input bandwidth	0,68444	3	0,68444	3	-	-	3,90278	1,73611	2,40296	2,40296
Router-Porto Alegre 2	High input bandwidth	-	-	-	-	-	-	10,86844	9,37500	4,15667	4,15667
Router-Tokyo 1	High input bandwidth	-	-	0,68444	3	-	-	-	0,00000	0,00000	0,00000
Router-Tokyo 2	High input bandwidth	-	-	-	-	1,04167	-	11,60395	14,91956	11,49322	11,49322
Router-Toronto 1	High input bandwidth	0,68444	3	-	-	0,68444	-	14,87096	12,34187	15,84722	15,84722
Router-Toronto 2	High input bandwidth	1,99556	11	-	-	0,68444	-	6,22778	0,33333	13,27778	13,27778
Router-Toronto 3	High input bandwidth	-	-	-	-	-	-	6,99556	1,73611	6,94278	6,94278

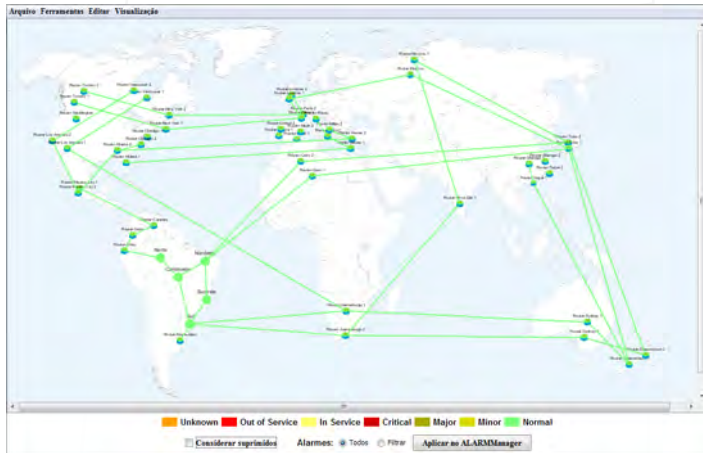
Legend: Frequency (unthreshold pad=0) - Base

# CPU Performance



## Maps

The devices managed by SLAview can be displayed and organized in maps, in order to show a broad view of your current network behavior. The alarms are shown in the map by changing colors on the devices.



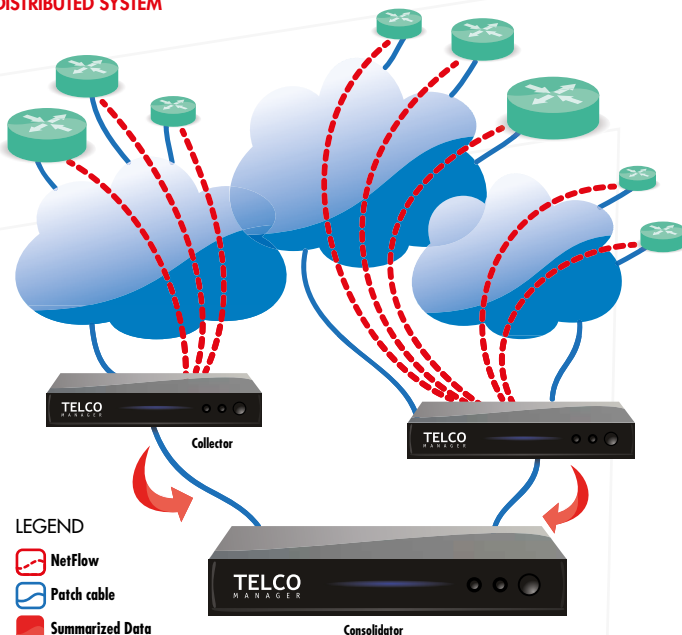
The same way that the alarms can be grouped by user, they may also be sorted by mapping, which means that the operational group can visualize a map where only the alarms that are relevant to their work will be displayed.

## Scalable Architecture

The SLAview can be configured to work with different network sizes. Telcomanager offers appliances with ability to monitor network environments with over 1000 devices, as well appliances with small capacity and cost-effective, focused on networks with few devices.

Using a cluster of collectors and traffic preprocessors that sends the collected and handled information directly to a central consolidator, you can expand the installing capacity to virtually any size of network environment. Currently, there are cases of operational networks larger than 10000 devices being monitored by a structure composed of less than 10 appliances, including specific appliances for redundancy.

### DISTRIBUTED SYSTEM



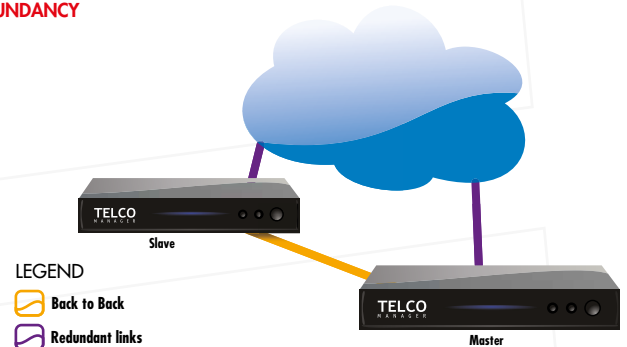
The Telcomanager collectors are not simply information readers. They process most of the data in a way that adding new collectors will not only expand the collection capacity, but also the overall system's performance.

## Redundancy

When the monitoring is considered a critical mission and cannot be interrupted, Telcomanager offers an option to enable two appliances for redundancy. In this operation mode, both appliances remain synchronized in configuration, data collection and data analysis.

The Telcomanager redundancy runs on a hot-standby system with no need of human intervention. When one device stops working, the other takes over all functions automatically.

### REDUNDANCY



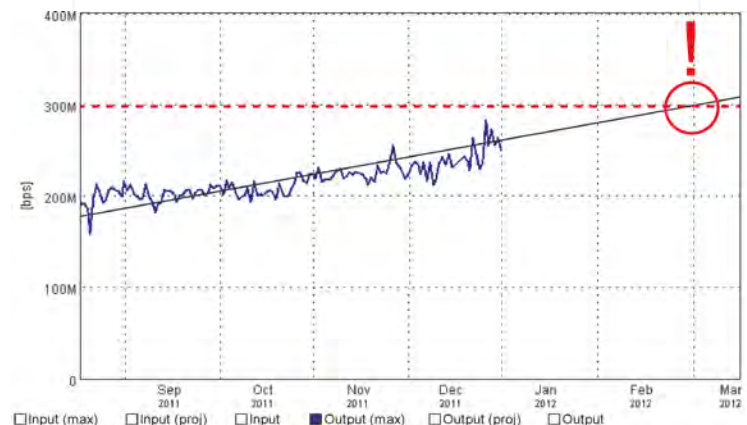
## Security, Authentication and Authorization

The SLAview uses a classic username/password mode for access control. This system can use passwords stored into the appliance or integrate it with an external Tacacs authentication server, or Active Directory.

You can also configure SLAview to use HTTPS protocol for a higher security and confidentiality.

## Trend Analysis

Using the collected data and its storage capacity, SLAview can make predictions about the network resource capacity and limits. For example, it can predict when a circuit needs to upgrade or even the estimated traffic for a given date.



Networks must fulfill dynamic use needs. It is well-known that it's not just dimensioning the network capacity one time and your worries are over. Networks must attend to a growing demand for corporate data traffic needs, and by facing this scenario, they are frequently expanding. The worst case is when the network administrator realizes this after it is already too late.

The trend analysis module was created focusing on the needs of a network administrator to act proactively into the capacity planning and network expansion, looking in advance to define when these expansions will be needed.

Get focused on expanding strategies, partner selections or in new technologies while SLAview does the boring and hard job to calculate and evaluate these data!

## Integration

SLAview can be integrated into the same appliance with TRAFip. More info about this product can be found on the TRAFip technical description.

## WEB Interface

The system features are displayed in a web interface, which allows fast navigation through the system menus and tabs.

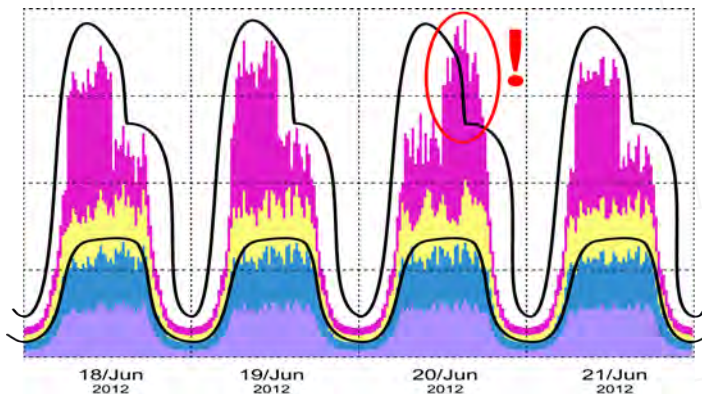
With the use of HTML resources, Java Script and Java Applets on the web interface to generate graphics and reports, SLAview allows, in many ways, to view and analyze data from the registered devices in the system. In a few clicks, charts and customized reports are displayed.



## Behavior Changes

For big traffic network variations throughout the day, fixed values are not the best solution, and sometimes it becomes quite complex to present a formula.

For these scenarios, SLAview has the functionality of change behavior. This is a true network administrator helper which is able to analyze traffic and establish adaptive rules that can simulate your typical traffic variations and adapt to them, setting alarms only when this specific behavior isn't noticed.



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