Stanza CONSULTING

MATADOR Product Description and Factsheet

Introduction

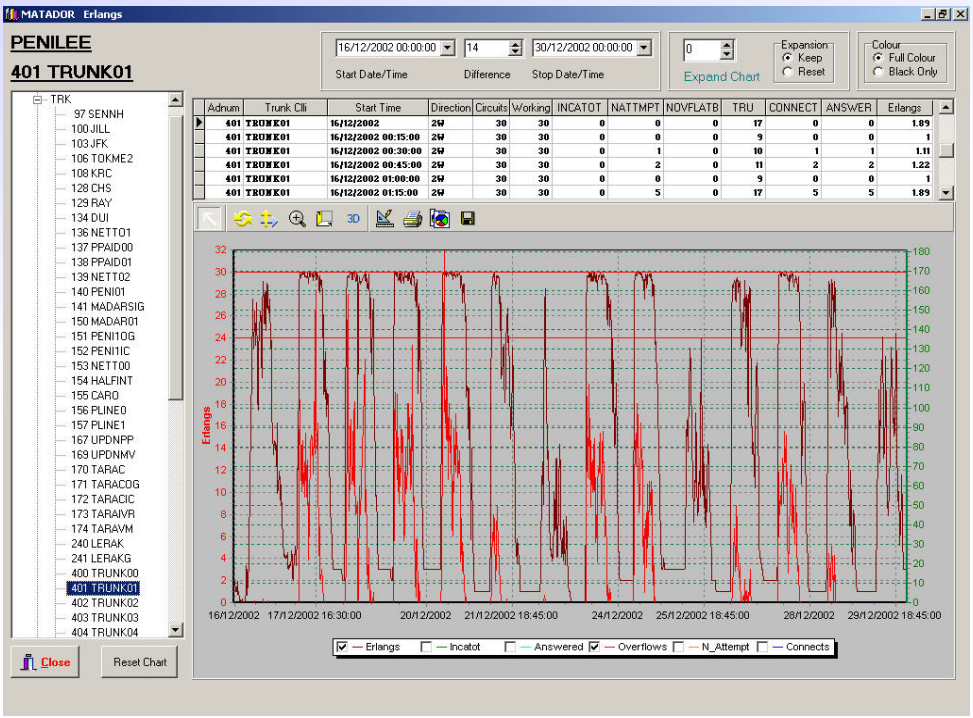
The Need for Traffic Analysis

In today's market conditions network operators must aim to maximise their revenue and their quality of service while controlling their operating costs.

Maximum utilisation must be obtained from the capital investment in network infrastructure but at the same time the operator must be aware of capacity constraints within the network and plan to meet future demand in a timely fashion.

Revenue assurance procedures must be in place to ensure that revenue is not lost due to faulty procedures or the inability to charge for some services. Opportunities to cut operating costs must be identified. (In particular, the interconnect arrangements with other operators are a prime source of both lost revenue and potential savings).

To maintain service quality, network faults must be identified and rectified as soon as possible. Capacity constraints must be anticipated before they degrade the service.



The key to meeting these objectives is the automated collection and analysis of network traffic data on a regular basis to be able to identify network problems and to quantify network performance and utilisation with a minimum of manual effort.

The MATADOR product, developed by Stanza Consulting, is a computer system for collecting, storing and analysing the data generated by the network elements in the course of normal operations. Results can be presented in a number of tabular and graphical formats to provide information in a form suitable for effective network monitoring and planning.

The current release of the product works with Nortel DMS switches. (It is planned that future releases will support interfaces to switches from other manufacturers besides Nortel). The Operational Measurement (OM) statistics produced by the switches are collected as they are generated and stored in a database to provide both a continuous network monitoring function and the ability to analyse Trunk Group and Line Module performance and utilisation. Historic data is retained in the database for a significant period (typically up to one year, depending on database capacity) to permit trend analysis and future growth projections.

A new module in development will add the capability to analyse billing records. By performing number analysis on the A and B numbers contained in the Call Detail Records, a detailed breakdown of both the source and destination of calls can be obtained. This information is vital in ensuring that revenue due from other operators for terminating calls is billed correctly and that interconnect costs for outgoing calls can be properly audited.

MATADOR employs client-server architecture, running on low-cost Unix or Linux platforms on the server side and standard MS Windows™ PCs on the client side. Open standards are used as far as possible to avoid being tied to a particular hardware platform and to facilitate future development. The system is designed to run generally unattended with a minimum of manual intervention

What MATADOR Does

MATADOR is constructed as a client-server system. The server component consists of data collector and data loader processes running on a Unix or Linux server platform. This also runs the MATADOR relational database. The client component consists of a Windows application, running on standard Windows PCs.

The server processes are responsible for capturing the OM reports from the switches and storing this data in the database. The client application is the user interface to the database, providing easy-to-use, point-and-click facilities for selecting the data to be reported and presenting this in tabular and graphical form. The client may be run by multiple users simultaneously, and an operator can have more than one copy running on the same machine, i.e. the system is multi-user/ multi-session.

The reporting facilities allow traffic statistics to be presented in a number of formats, varying from highly detailed reports to summarised overviews. Thus, it is possible to select an individual trunk group and to show on a graph many different performance parameters for the one trunk; for example: number of circuits (provisioned and in service), number of outgoing call attempts, number of incoming calls, trunk utilisation in Erlangs, and so on.

Alternatively it is possible to select multiple trunk groups to be included in the same report. In this case the level of per-trunk detail in the report is reduced but it is a convenient means to obtain an overview of the traffic across a number of trunks. Facilities are provided for the user to pre-define sets of trunk groups (“trunk types”) to make reporting more convenient. An example of a trunk type might be all trunks carrying traffic to a particular Internet Service Provider.

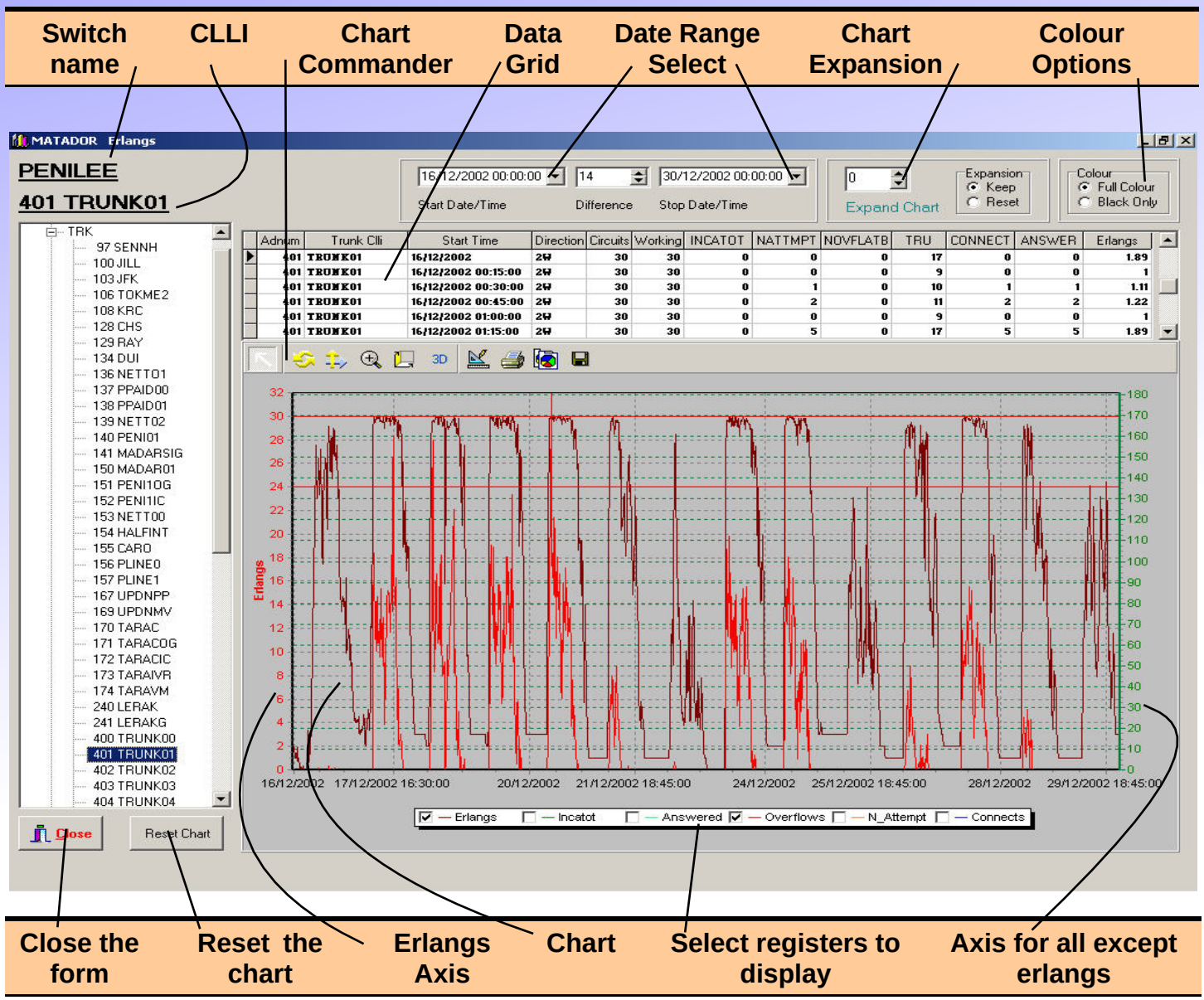
Trend analysis is an extremely important element in network planning and maintenance. You need to be able to predict with confidence when capacity on individual trunks need to be increased. On the other hand, you also need to know which trunks are not carrying significant traffic so that you can distribute traffic more evenly to avoid overflows. With its graphical interface, MATADOR lets you see trends instantly. You can quickly view trends for the busy hour or trunk usage and compare them with the same day one week, one month ago and so on.

The user specifies the period which the report is to cover. The period may range from a single day, permitting the user to inspect traffic behaviour at a very detailed level and to focus on specific anomalies, to several weeks or months in order to gain a picture of the overall trend in traffic volumes. The default when MATADOR starts is the previous day’s data.

The user may define a threshold value in terms of a percentage for certain quantities such as the Erlang value. The threshold is included in the graphical reports to allow easy visual identification of trunks running near maximum capacity.

The chart screen

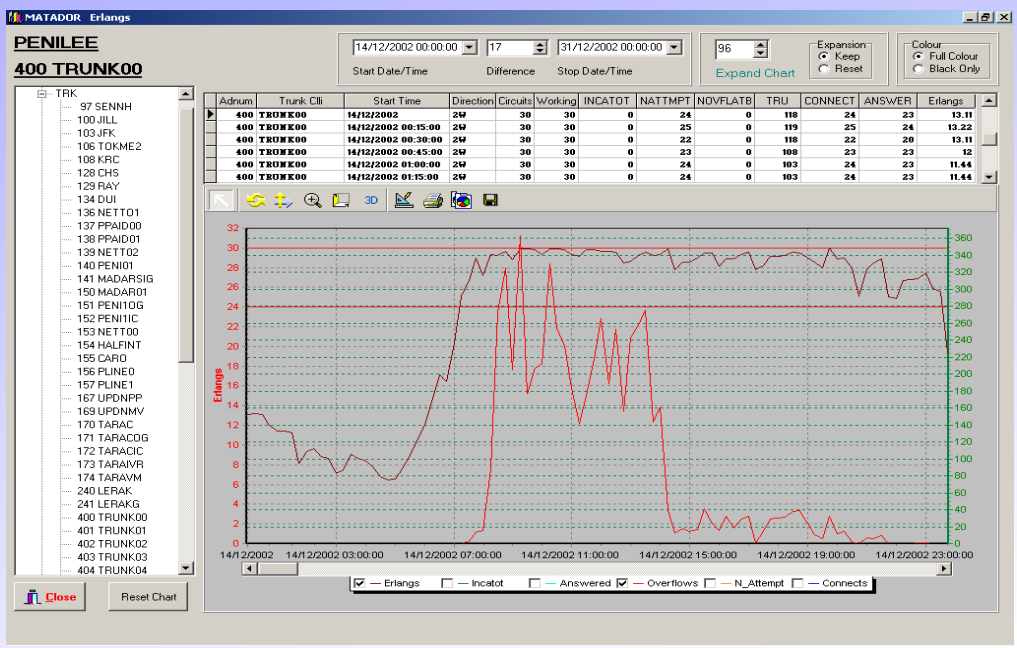
The screen shown is for a trunk. For LMDs the CLLI becomes the host_id, and the register names change accordingly.



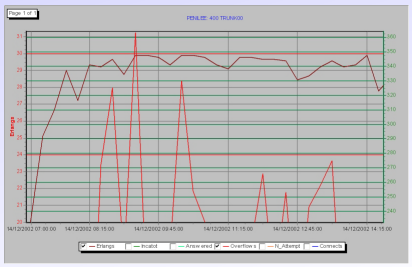
You can see that generating a graph is extremely simple. All it takes is a few points and clicks with the mouse and the chart is generated and displayed. It could not be simpler. All the complexity of data gathering, parsing, loading and finally chart generation is made deceptively simple.

Viewing, Printing and Distributing Charts.

When a chart is first generated all data points are on one page. If a period of several days or more is selected, the chart will be quite crowded. You can make the chart occupy more than one page by use of the Expand Chart facility provided. You can then step through the pages, or pan to a particular period, and then use the zoom facility to examine a particular area of interest. This lets you see exactly when exceptional operating conditions were encountered, and what their effect was.

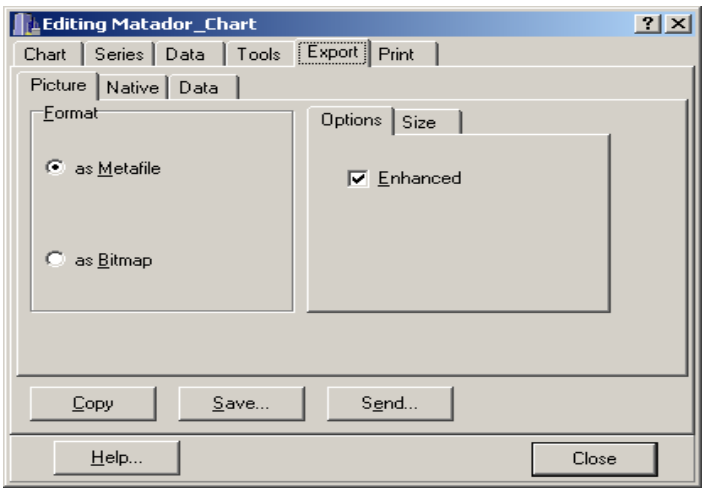


Showing the effect of chart expansion. 96 points corresponds to 24 hours, assuming 15 minute collection intervals.

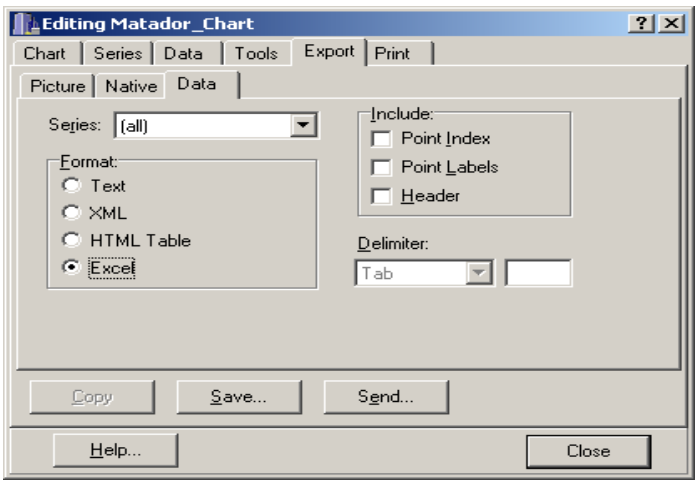


After expansion, zooming in to see the peak in greater detail. You can apply successive zooms as required..

Through the Chart Commander the program has many facilities to distribute the chart and the data which was used to generate it. The chart may be printed, either in colour or black and white. If B&W is chosen, then the line styles automatically change so that the graphs for the different registers are easily distinguishable. A great convenience is that you can email the chart straight from the program, there is no need to save it to disk first and then start your mail program.



Of course, you can save the chart to disk either as a bitmap or metafile.



You can also export the raw data in a variety of formats for use with external applications such as MS Excel.

MATADOR Summary

MATADOR is a network and traffic maintenance tool, designed to help you *plan and maintain* your network whilst also allowing you to *identify potential revenue leaks and losses*.

- Graphical display - immediately see trends and potential problems. Plan for the future with confidence.
- Generate reports - no more hand calculations. MATADOR generates your reports from the data, with accuracy assured.
- Easy to use - generally, all the operator has to do is choose dates and equipment with the mouse, and the job is done. Some administration screens require minimal typed input.
- Easy to maintain - apart from normal routine maintenance, no intervention is required. The collector and loader processes run automatically. Normal maintenance involves data archival and ensuring the disk space is sufficient. Scripts are provided to facilitate these tasks.
- Convenient - MATADOR charts can be viewed, expanded and zoomed, printed, and emailed all from within the program. There is no need to start external programs for these tasks.
- 3D views which can give an added perspective to data.
- Export raw chart data to a variety of formats including MS-Excel.
- Secure - access to user rights and roles controlled by username/password.
- Multi-userer/multi-session
- Competitive price.

For the Future

Stanza has started the development of a billing records analysis module which may be used in conjunction with the main MATADOR program. Amongst the most exciting features of this module is the ability to correlate the CDR information with the route data collected by MATADOR, offering a higher level of revenue protection. Naturally full A-number and B-Number analysis will be integral to the module.

Full details will be released when the module becomes available, expected to be Q2 2003.

The client-server architecture requires a tcp/ip connection between the client machine and the server. The switch must have a tcp/ip connection to the server. The speed of connection can affect the performance, and a high-speed LAN is recommended.

MATADOR Server*	
Operating System**	Sun SOLARIS, LINUX-x86
Memory Requirements	256 MB minimum
Disk Capacity	4 GB
CPU Speed	> 360 MHz (SPARC) > 450 MHz (x86)

**** The above figures assume that MATADOR is running on a dedicated server. The performance of the system depends upon the amount of free memory and CPU speed. The above figures are recommended minimum requirements.***

** Operating System: The system has been developed and tested with LINUX on Intel x86 and SOLARIS SPARC platforms. However, ports to other U*IX variants should also be possible.

MATADOR Client*	
Operating System**	Windows 2000, XP
Memory Requirements	128 MB minimum
Disk Capacity	100 MB
CPU Speed	>200 MHz

**** The above figures assume that MATADOR is running on a dedicated PC. The performance of the system depends upon the amount of free memory and CPU speed. The above figures are recommended minimum requirements.***

** Operating System: The program has been tested with Windows 2000 and XP, but should also run on other recent variants.

Stanza Consulting is a supplier of products and services to the telecommunications industry. We specialise in mediation, billing and traffic analysis.

Since we formed in1999 we have provided mediation products and consultancy to some of the best-known operators and manufacturers world-wide.

Our staff consists almost entirely of engineers with years of experience in designing and implementing software specifically for telecommunications. We deal only with telecoms, so our experience never becomes diluted and our focus remains tight.

OUR PRODUCTS are designed with the user in mind. They are, where possible, highly modular and user-configurable, which lowers the total cost of ownership (TCO) to the end-user. They are also designed so that the minimum of user intervention is necessary - once started, the programs need no further attention, apart from routine maintenance, further contributing to a low TCO.

All our products are backed by flexible support and maintenance agreements.

CONTACTING US

Stanza Consulting welcomes enquiries. If you would like to know more about our company, its products or services, then please contact us by phone, fax or email.

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