
Traffic Classifier

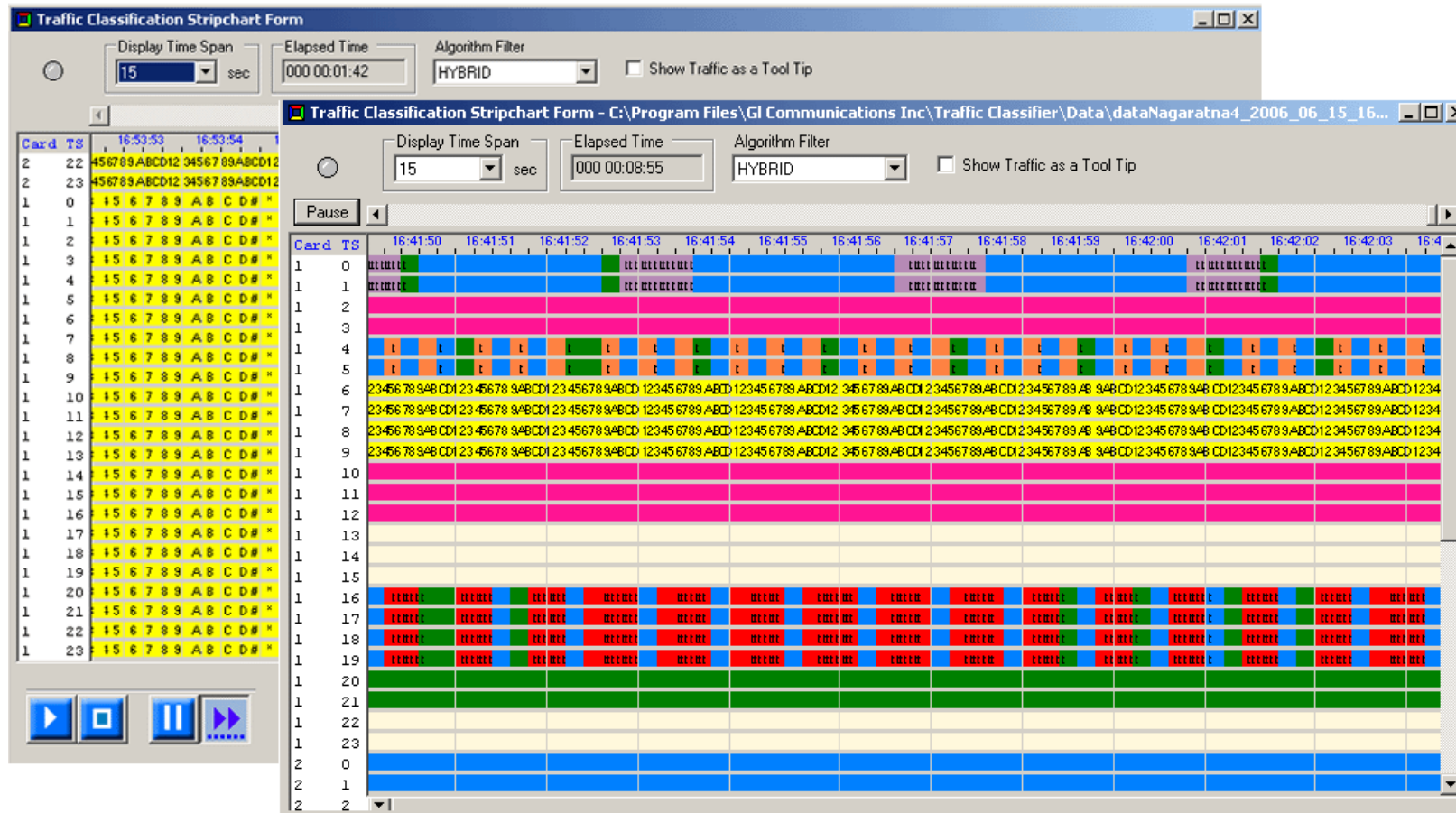
Real Time Classification and Analysis of T1/E1 Traffic



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Traffic Classifier

- Traffic Classifier an application that can analyze the traffic on a T1 / E1 line.
- It can analyze and classify various traffics such as voice, fax, data, tones (dial tone, ring-back tone, busy tone etc.) as well as identify dialing digits and other events happening on a T1 / E1 network.



Importance of Traffic Classifier

'Traffic Classifier' – a new tool for Non-intrusive, Real-time Monitoring and Classification of T1 and E1 Traffic.

- Do you know what is happening on your T1 (or E1) network?
- How optimally are you (or your customer) using your T1 (or E1) network?
- The companies may be running a gigabit LAN for their internal network, but most corporate networks are still connected to the WAN through a T1 or slower connection.
- This speed mismatch between the internal network and the outside world may lead to a potential data bottleneck and is an important reason why for any Network Provider or Network Manager to understand and analyze 'what is happening on their T1 (or E1) line".
- Traffic Classifier can analyze and classify various traffic such as voice, fax, data, tones (dial tone, ring-back tone, busy tone etc) as well as identify dialing digits and other events happening on a T1 (or E1) network. It uses various identifying schemes depending on the country of choice and classifies the traffic, based on the dialing tones stipulated for that country.

Features

- Ability to non-intrusively monitor T1 (or E1) line in real-time and offline modes.
- Sixteen traffic types are classified, which include Tones (dial, ring, busy), Voice/Speech, Data and Fax Signaling, Dialing digits (DTMF, MFR1, MFR2F, MFR2B) etc.
- Data and fax modulations such as V.22, V.34, V.29, V.32, and V.27 are supported as traffic types.
- Monitor single or multiple DS0s on multiple T1 (or E1) lines.
- Monitor the T1 (or E1) line locally or remotely through TCP/IP connection.
- Provides real-time display of the traffic types for each DS0 on the T1 (or E1) trunk.
- Result options allow the results to be either displayed on the screen, and/or save it to a file for extended periods.
- Off-line (playback) feature can playback or fast forward previously recorded results.
- Analyzes the T1 (or E1) traffic and graphically displays the results as a strip-chart.
- Codecs supported - mu-law, A-law, and linear.
- Traffic view for a specific span of time by using the File Scroller option.
- Four algorithm options (Linear, quadratic, hybrid and hybrid filtered) to fine-tune the classification results.

Applications

- Real-time snapshot of the T1 (or E1) network activities.
- For network surveillance and data collection.
- For Pre-deployment analysis of a network.
- For Research and Development, Traffic Engineering and Network Condition Analysis.

Benefits

Knowing how you use network is essential for proper planning and engineering of a network. Using Traffic Classifier will enable you to:

- Collect information on the traffic trends and plan for future.
- Build a Business Case and decide how to deal with the data flow, network capacity, and so on...
- Compare loads on a channel-to-channel or T1-to-T1 (or E1-to-E1) basis & optimize your resources
- These actions help your company provide better services to your customers and thus increasing your chances of success!

Traffic Types

- **Modem Traffic**

- V22FOR (V.22 Forward) - Slow modem (forward channels) - typically Point of Sale terminals like VISA- 2400 bps
- V22REV (V.22 Reverse) - Slow modem (reverse channels)- 2400 bps
- V34V90UP (V.34) - Fast modem- 33600 bps
- V29- Common fax- All speeds

- **Fax Traffic**

- V32V17GT24 (V.32) - Fast fax and modem- >2400 bps.
- V27AT48 (V.27) - Slow fax- 4800 bps
- V27AT24 (V.27) - Slowest fax - when V.29 has transmission problems, this mode is used as fall back.- 2400 bps
- FSK- Fax signaling - page break, end of page, end of transmission- 300 bps

- Voice or Speech Signals.

- Digits- DTMF/MFR1/MFR2F/MFR2B Digits- 40 bps.

- Tones such as Dial Tone , Ring-back Tone, Busy Tone, Idle (digital silence).

Class & Name	Signal Type(s) and applications	VBD (Voice Band Data) Standard	Max. Bit rate (bps)	Modulation type (main)	Default Color Code
Unknown (Silence)	Silence - channel handling a call but no signal is detected (eg: pause in speech)				Blue
V22FOR (V.22 Forward)	Slow modem (forward channels) - typically Point of Sale terminals like VISA	Bell 103 & 212A, V.21, V.22, V.22bis	2400	FSK, DPSK, QAM	Brown
V22REV (V.22 Reverse)	Slow modem (reverse channels)	Bell 103 & 212A, V.21, V.22, V.22bis	2400	FSK, DPSK, QAM	Green
V34V90UP (V.34)	Fast modem	V.34 & V.90 Uplink	33600	QAM	Cyan
V29	Common fax	V.29	All speeds	QAM	Light Blue
V32V17GT24 (V.32)	Fast fax and modem	V.17, V.32, V.32bis	> 2400	QAM	Dark Blue
V27AT48 (V.27)	Slow fax	V.27ter	4800	DPSK	Pink
V27AT24 (V.27)	Slowest fax - when V.29 has transmission problems, this mode is used as fall back.	V.27ter	2400	DPSK	Olive
Voice	Speech				Dark Green
BIN90DOWN (Binary)	Native binary - ISDN Basic Rate Interface	V.90 Downlink	64000		Dark Red
FSK	Fax signaling - page break, end of page, end of transmission.	Frequency Shift Keying	300	FSK	Yellow
Digits	DTMF/MFR1/MFR2F/MFR2B Digits		40	Digits	Yellow
Dial Tone	Dial Tone				Orange
Ring back Tone	Ring back Tone				Purple
Busy Tone	Busy Tone				Red
Idle	Idle - channel is on line but not in use (digital silence)				Grey

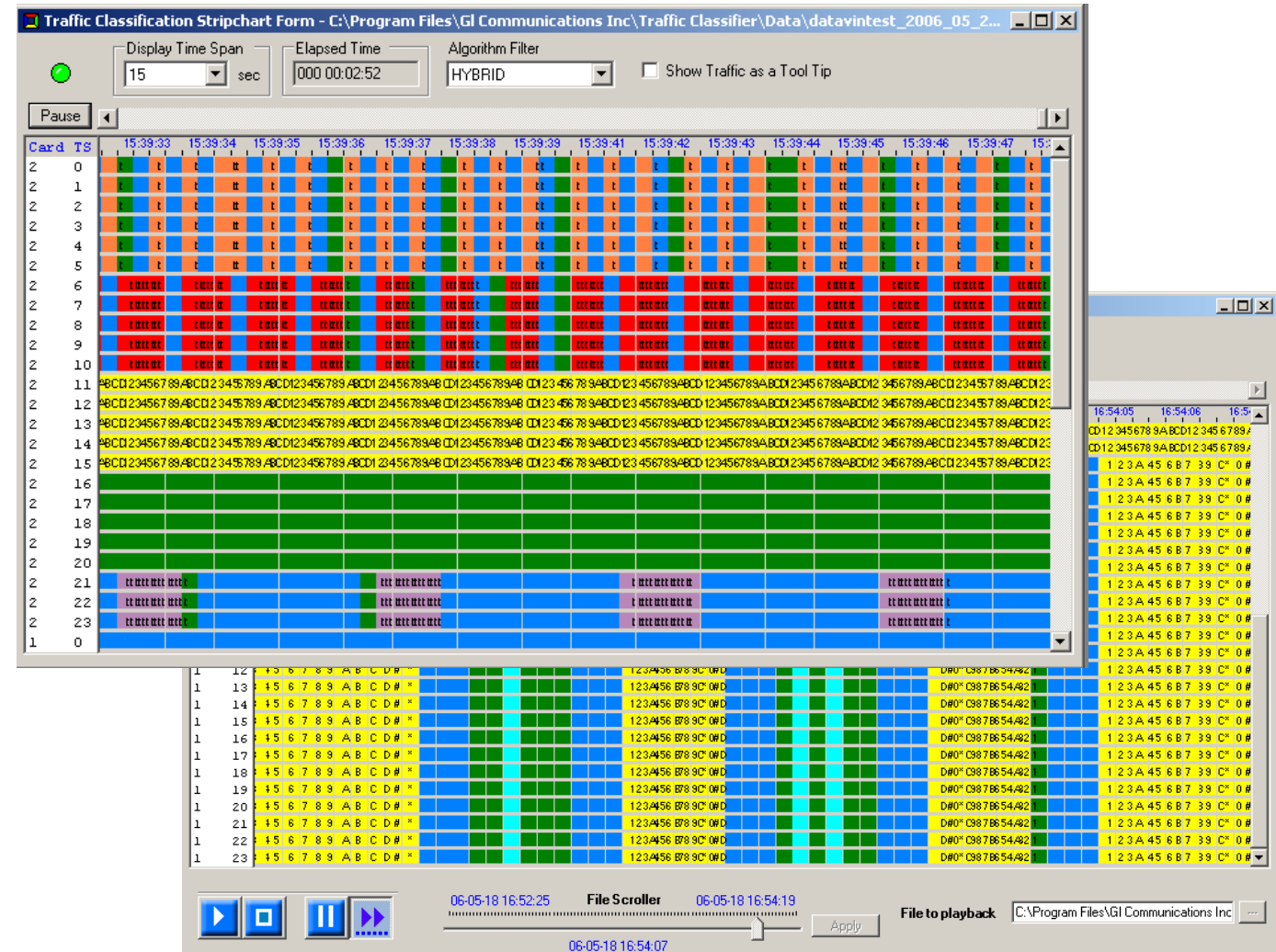
Color Configuration

- Users can customize the color coding used by the Traffic Classifier when displaying the various types of traffic.



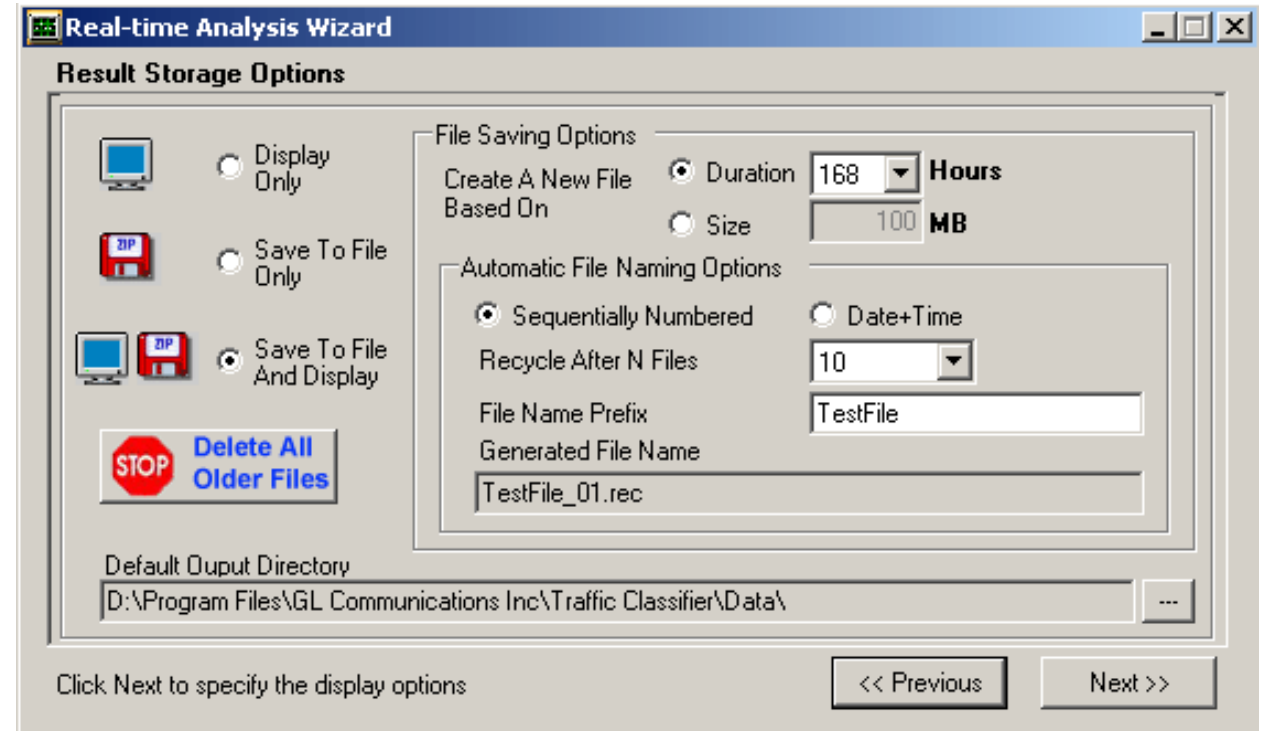
Real-time and Playback (Off-line) modes

- In Real-time mode, the user can capture the live traffic on a T1/E1 line and classify the information transmitted on that line. In this mode the Traffic Classifier runs in a Client-Server setup.
- In offline mode, user can load and display previously recorded classification results. Starting the server is not necessary in this mode. The recorded result file (*.rec file) can be played back using the playback window.
- It is also possible to view the traffic for a specific span of time in the recorded file, by using the File Scroller option.



Result Storage Options

- Result Storage options allow the results to be either displayed on the screen, and/or save the results into a file. The file can be later opened in offline mode.
- The application also provides the following features:
 - Create a new file based on duration or size, where the user can set either the duration up to 168 hours or the size up to 1 GB.
 - New file names are created automatically using either Sequentially numbered or Date+Time based schemes. Also have option to cyclically overwrite the older files and add a prefix to the file name.



Thank You