TL200
TelliShape V2.6
Tellitec Product Family

tellitec

Description

TelliShape is a unique multilevel IP traffic policing and real time shaping software solution for shared networks and can be operated as a router or a bridge.

As corporate and private users demand more and more bandwidth, service providers need to apply sophisticated traffic policing and shaping mechanisms in order to ensure that the available bandwidth is distributed in the most appropriate manner among the active users. Although TelliShape is optimized to provide traffic policing and shaping mechanisms for satellite networks it can be used for any other type of terrestrial or wireless IP network. As a unique functionality, the TelliShape software solution provides adaptive traffic shaping, which makes it the first choice for shaping the traffic of networks where the throughput of the link is varying over time.

With the TelliShape software solution it is possible to restrict the maximum given peak bandwidth at three diff erent tiers: per individual user, for groups of users and for groups of user groups. Moreover, guaranteed bandwidths as well as weighting factors for the distribution of the total available bandwidth can be configured with the same granularity. The TelliShape traffic policing engine also allows the distribution of the available bandwidth among services in order to e.g. higher prioritize time critical VoIP traffic and to throttle certain downloads. Both, the hierarchical grouping structure as well as any traffic policing rule can be reconfigured on-the-fly and without causing any downtime. Real Time Protocol (RTP) based traffic can be automatically detected and prioritized by TelliShape.

For further improvement of the users' download and web surfing performance the TelliShape solution can be combined with the TelliNet IP traffic enhancement software solution that is also part of the Tellitec IP software product family. TelliNet delivers a set of superior TCP and application acceleration techniques, like the Enhanced TCP (ETCP) protocol. Although the end users' traffic is compressed and cryptographically secured by TelliNet, TelliShape is able to classify ETCP traffic and to apply the configured policies and shaping rules.

With an optional DVB-S2 IP encapsulator software module, TelliShape software solution encapsulates the shaped IP traffic in DVB-S2 base-band frames that are ready to be processed by an external Elevation series DVB-S2 modulator such as the EL170. By this, TelliShape also supports VCM (Variable Coding and Modulation) and the simpler DVB-S2 CCM (Constant Coding and Modulation) mode.

As another unique functionality, the TelliShape software package off ers an optional DVB-S2 ACM controller software module that monitors the signal reception conditions at the remote sites of the network and selects automatically the most efficient modulation and coding parameters for each base-band frame. This option ensures that the bandwidth of the satellite link managed by the TelliShape software solution is always utilized in the most efficient manner while the traffic shaping engine automatically adapts to the resulting bandwidth variations.

The TelliShape and the TelliNet software solutions are also available as integrated IP appliance via the Elevation product family, also known as Elevation PEP-Boxes®.

Key Features

- Link quality adaptive traffic shaping engine
- Three-Tier shaping hierarchy, e.g. users, groups of users and groups of user groups
- Supports Committed Information Rate (CIR) and Peak Information Rate (PIR) policies
- Supports equal and weighted bandwidth distribution
- Automatic RTP detection for VoIP applications
- Classifies accelerated, compressed and encrypted ETCP traffic
- Hierarchies and policies can be changed on-the-fly
- DVB-S2 base-band frame interface to Newtec's Elevation series modulators
- Supports DVB-S2 MPE, XPE and ULE encapsulation
- Optional ACM controller

Main Advantages

- Increases Quality of Service (QoS)
- Highly reliable and hardware independent software design
- Quick and easy to integrate through open interfaces
- Customizable for OEMs

Applications

- Triple play services
- VSAT services
- Satellite and wireless consumer broadband Internet services
- Point-to-point and point-to-multipoint IP trunking services

Related Products

TL100 TelliNet: IP traffic enhancement software solution consisting of unmatched performance enhancement features to allow efficient Internet services via satellite and mobile networks.

TL400 ProVision: Subscriber and service management interface for TelliNet and TelliShape.

EL820 PEP-Box® Terminal, TelliNet Client and TelliShape embedded
EL830 PEP-Box® Gateway, TelliNet Client and TelliShape embedded
EL840 PEP-Box® Server, TelliNet Server and TelliShape embedded
EL170 Satellite IP Modulator
EL178 High Speed IP Modulator
EL470 Satellite IP Modem
EL478 High Speed IP Modem

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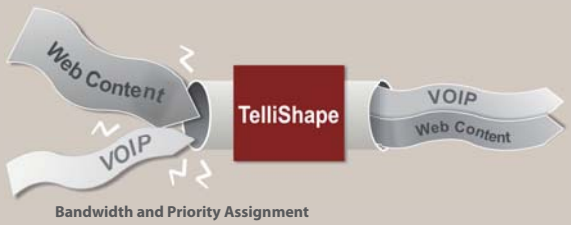
Specifications – TL200

System Architecture
- Operating stand-alone or in combination with TelliNet (also known as "feedback mode")
- Operating in Router Mode (OSI layer 3)
- Supports Linux 2.4.x - 2.6.x**

Traffic Policing
- Real-time adaptable traffic policy changes without service interruption and without packet dropping
- Interface to TelliNet Server/Client for back pressing TCP streams (Zero-Paket-Loss Congestion Avoidance)
- Shaping IPv4 unicast and multicast traffic
- Supports committed information rate (CIR) policies
- Supports peak information rate (PIR) policies
- Supports equal or weighted bandwidth distribution
- Up to ten configurable traffic priority classes
- Bandwidth is distributed equally or according to a configured weighting factor
- Supports IP ToS (Type of Service) transparency or IP ToS injection
- Supports classification and shaping of accelerated and encrypted ETCPv1/ETCPv2 traffic



Bandwidth and Priority Assignment
TelliShape can recognize data packets of different applications and dynamically assign bandwidth and priority to them to resolve congestion of especially time-sensitive applications like VoIP traffic.

Traffic Classification/Prioritization
- Source and/or destination IP address, IP address range or IP subnet
- Protocol type (TCP, UDP, ICMP, RTP, ESP, AH, GRE, ETCP)
- Source/destination port or port range (TCP or UDP)
- IPv4 ToS value
- TelliNet User Name ***

Three-Tier Group Support (Optional)
- Three-tier group support for defining e.g. rules per end user, per group of users and per group of user groups

Three-Tier Group Support
Hierarchical management allows to restrict individual bandwidth utilization per group, group of groups and per client.

Traffic Accounting (Optional)
- Integrated traffic accounting
- Granularity down to on a per-rule basis
- Output as comma separated (CSV) files
- Flexible accounting file rotating mechanisms
- Accounting record values: bytes transmitted (CIR, MIR), bytes dropped, packets transmitted, packets dropped, min/max/average queue time, min/max/average throughput

DVB-S2 IP Encapsulation (Optional)
- Based on DVB-S2 Base-Band frame encapsulation
- Supported encapsulation protocols: MPE, ULE and XPE (GSE planned)
- Supports all 28 modulation codes (QPSK up to 32APSK) defined in ETSI EN 302 307
- Supports DVB-S2 CCM, VCM and ACM modes
- Supported roll-off factors: 0.2, 0.25, 0.35
- Supports pilots on/off
- Supports short and long frames
- Interface to Elevation modulator series for back-pressing data to prevent queue overflows
- Supports the limitation of overall throughput on basis of
  - IP data rate
  - DVB-S2 symbol rate
- provides automated terminal settings mappings (e.g. in order to switch automatically the PID when a new MODCOD becomes active)

DVB-S2 ACM Controller (Additional Option)
- Interface to Elevation series demodulators and modem for the reception of link quality feedback
- Automated DVB-S2 modulation/coding selector
- Satellite link bandwidth calculator
- Open IP based interface for the interaction with an external DVB-S2 ACM Controller

Reliability
- Built-in software watchdog and CPU-/RAM-usage monitoring
- Supports warm redundancy with automatic fail-over

Management
- Simple ASCII based configuration files
- Web-based interface for live monitoring
- Logging with automatic log rotation
- Supports e-mail based error notifications

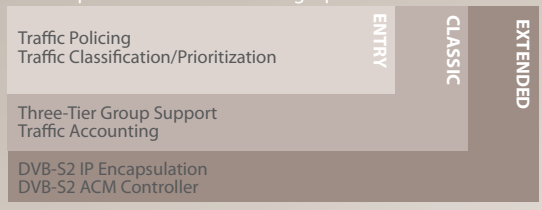
Performance*
- Up to 200 Mbit/s with 20000 active terminals and 200 shaping rules
- Up to 80 Mbit/s with 20000 active shaping rules
- Up to 500 Mbit/s with 200 active shaping rules

Supported Hardware Platforms**
- Intel x86 compatible
- Intel XScale
- MIPS
- PowerPC

Ordering Information**

	Ordering Number
TelliShape Server For consumer services, one-way satellite services	TL-210 LIN
TelliShape Server For enterprise consumer services, i.e. VSAT and DVB-RCS	TL-220 LIN
TelliShape Server For IP Trunking	TL-230 LIN
TelliShape Client For consumer services, one-way satellite services	TL-270 LIN
TelliShape Client For enterprise consumer services, i.e. VSAT and DVB-RCS	TL-280 LIN
TelliShape Client For IP Trunking	TL-290 LIN

TelliShape Server/Client Ordering Options:



* Tested on the following system: Intel® Xeon® CPU X3220 @ 2.40 GHz, 4 GB RAM, NTC Enterprise Linux 4.2, 32bit
** Others on request
*** In combination with TelliNet only

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