

# 802.1ag/Y.1731 w/RFC 2544

In ITU Y.1731 the Frame Loss Ratio (FLR) and the Frame Delay Variance (FDV) counters—were designed to monitor traffic that had been generated by applications on the path. Most service providers are required to know what the throughput of a path is at any given time. Monitoring traffic throughput is important to a service provider for diagnostic, monetary and regulatory reasons. Y.1731 defines Test Frames (TST) for monitoring the actual traffic throughput. ITU Y.1731 TST frames are injected by an end-point into a data path and then removed by a designated peer, which can then report back to the Network Management System (NMS) on the number of frames received and the rate at which they were received.

When used in combination with RFC 2544, TST frames can effectively test the entire circuit's bandwidth at different packet (MTU) sizes. The maximum injection rate can be the maximum known capacity of the path or equal to the Committed Information Rate (CIR). For example: If two devices are connected at 100mbps, the injection rate could be anything up to but not exceeding 100mbps. Most RFC 2544 tests are done out of service because it is preferred that the injected traffic does not interfere with real applications running on the network. To avoid disrupting real traffic, Transition's performance management products with RFC 2544 use an in-service injection of test frames that is purely supplemental to the real traffic rate, up to the defined limit on the path. The amount of real traffic is measured by the end-point and any excess is filled with ITU Y.1731 TST and RFC 2544 frames.

The TST frames are counted and removed from the path at the designated peer. The designated peer then reports the number of real and test frames received for a given interval of time. With this information the designated peer can then compare the received frames to the actual number of transmitted frames, to see if the path is performing as expected. If the number of received frames is different than the number of transmitted frames, pre-defined alarms or events can be sent to the operator to indicate there is a throughput issue that will need to be resolved.



# 802.1ag/Y.1731 w/RFC 2544

## Application

Performance Management is generally used for enterprises who require a guaranteed level of SLA performance and monitoring. For example, a financial institution that needs to have up-to-date information with no delay—as latency can mean the difference in the success of the institution. In these types of SLA agreements, legal contractual obligations are defined and agreed upon by both parties.

## Features

- Frame Loss Ratio (FLR)
- Frame Delay Variance (FDV)
- Throughput Monitoring
- RFC2544 Test Frames

