

Multi-Segment Analysis: Solving Network & Application Performance Issues

Companies are increasingly relying on applications for business-critical tasks, making application performance a key issue. Network disruptions are now business disruptions, and the worst disruptions can sometimes have financial or even legal consequences. Network engineers tasked with keeping this essential system of applications, networks, clients, and servers up and running at peak performance with minimal latency need to have the right tools and processes available to help them ensure the availability of these services.

In the past, a single data path could be easily dissected to determine if poor application response time was due to the network or the application itself. With distributed application architectures a new technique called, multi-segment analysis, is required in order to pinpoint the location and cause of latency or other application performance issues.

What is Multi-Segment Analysis (MSA)?

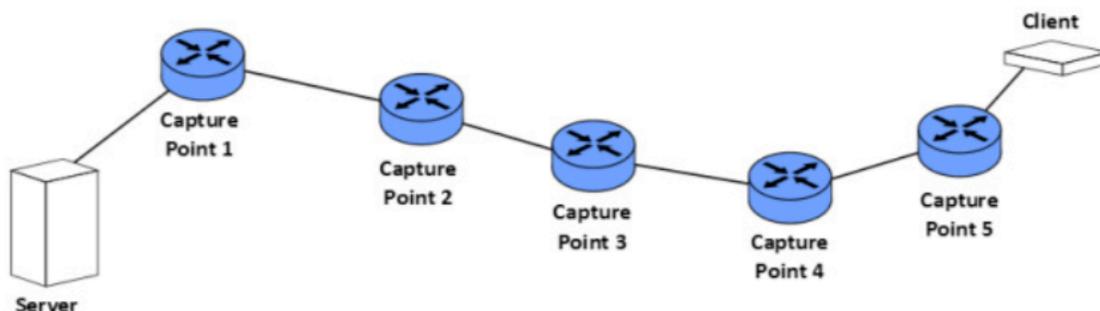
Traditional performance analysis of centralized applications with local users lent itself to real-time network analysis at a single network link as all relevant data could be collected from that one location. Application metrics like latency (both network and transaction), number of turns, overall network bandwidth, payload sizes, and even the packet payloads themselves (for detailed application-level troubleshooting) were readily available on that single link.

With distributed application architectures the same data is required. But multiple network links, or hops, must be analyzed to get the full picture and to isolate not only the issue but whether it's the application or the network, and if the network, what network link it is occurring on. For example, to troubleshoot application performance problems for users at a remote site, data should at least be collected at the remote office internet connection and the data center to understand the issue.

Multi-segment analysis provides a solution for IT professionals to get necessary data from these multiple network links, or hops, in order to troubleshoot application issues.

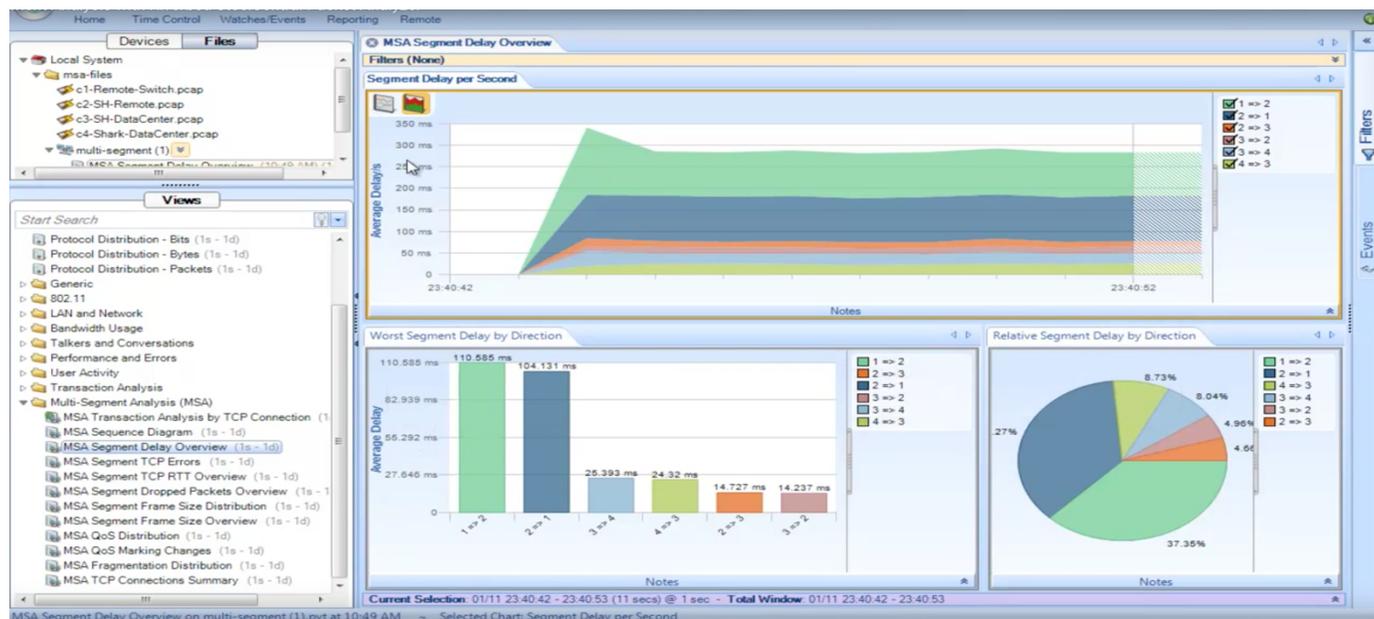
Multi-Segment Analysis (MSA)

Multi-segment analysis (MSA) allows you to combine traffic data captured over the same time period from different locations on the network so you can view and analyze the traffic flows.



How Does MSA Work?

Multi-segment analysis is a post-capture method that automates and simplifies the process of gathering and visualizing network data from multiple network segments and/or multi-tiered applications. Multi-segment analysis correlates this data across the various network segments, finding common elements so the individual application transactions can be reassembled from a network perspective, visualized, and analyzed to indicate potential problem areas. It provides a clear view of the application flow, including network and transaction latency, application, turn times, packet retransmissions, and dropped packets. With this information in hand, network engineers can easily pinpoint where the anomalies are occurring with applications, whether at the client, server, or network.



The Right Product for Each Network Segment

Multi-segment analysis improves with each additional measurement point. While large and highly capable network appliances fit the use case for data centers and corporate offices, they are far more than is needed for remote offices with limited network bandwidth. G-Net MSA solution, using small Riverbed network appliances for remote offices, provides a very economical alternative for collecting network data at remote offices for multi-segment analysis.

With G-Net MSA, it is possible to introduce a measurement point at each remote office, providing valuable and until now unachievable, measurements of network latency between your remote offices and your data center(s).

Because multi-segment analysis requires at least two capture points to work, it has not been heavily utilized since most customers deploy a single large appliance at the network core. But with the release of G-Net MSA, multi-segment analysis becomes much more affordable and accessible to our customers who already have Riverbed in their data centers. By deploying inexpensive riverbed devices inline at the network edges, and even along the path between critical network components, G-Net multi-segment analysis can be used to gain greater visibility into network latency for all your network users, regardless of location.

G-Net multi-segment analysis is passive, rather than active. Instead of generating network traffic, G-Net multi-segment analysis monitors and measures the real traffic that is actually exhibiting the problem, not test traffic that is used to measure latency along the same path. And because G-Net MSA can economically be placed in the network path, they work in association with larger appliances in the data center to provide insight into where the latency is occurring.

