

Riverbed SteelCentral and Big Tap Monitoring Fabric

Achieve unsurpassed benefits of scale, simplicity, efficiency and cost optimization by deploying Riverbed SteelCentral products with SDN-powered Big Tap Monitoring fabric. This multi-tenant and easy-to-manage solution delivers unprecedented and pervasive monitoring that enables easy and efficient troubleshooting of applications and networks across the enterprise.

THE CHALLENGE

Data centers worldwide are seeing an increasing demand to monitor more of their network traffic, which is growing at an extremely rapid pace. It's clear that optimal tapping or mirroring of network traffic is paramount for efficient troubleshooting to deliver optimal network and application performance.

Key requirements of modern monitoring infrastructure include:

- **Flexibility and Scale:** Box-by-box designs need to evolve to a fabric-based approach.
- **Consolidation and Efficiency:** Traffic tapped anywhere within the network can reach any tool, increasing tool performance and scope.
- **Simplification and Centralization:** A single pane of glass to provision and manage monitoring policies, fabric operations and troubleshooting.
- **Cost Reduction:** Sufficiently low in CAPEX and OPEX costs so all data center traffic can be monitored.

THE SOLUTION

Riverbed Technology and Big Switch Networks have partnered to provide a cost-optimized, application-aware network monitoring solution enabling easy and efficient troubleshooting of the network and applications. The joint solution offers unprecedented scale for data center-wide monitoring, including east-west application-to-application traffic. The SDN-powered Big Tap Monitoring Fabric delivers tapped and SPANed traffic to the Riverbed SteelCentral application-aware network performance management platform, which ensures comprehensive monitoring with detailed packet capture and analysis. Customers realize unsurpassed benefits of having a highly scalable, operationally simple, and cost-optimized solution while eliminating the choke points typically seen in static, box-centric monitoring solutions.

THE SOLUTION COMPONENTS

The Riverbed SteelCentral Solution

The Riverbed SteelCentral suite of products provides non-intrusive, sustained, real-time information into network and application performance. The SteelCentral NetShark and SteelCentral AppResponse ensure comprehensive monitoring with detailed packet capture and analysis for proactive alerting and rapid rectification of problems in the network. They feed data to the SteelCentral NetProfiler, which provides early warning when traffic deviates from normal behavior and end-to-end visibility into network performance, down to the user IDs. This enables easier, faster and smarter problem diagnosis and troubleshooting, making the network more efficient.

The Big Tap Monitoring Fabric

The Big Tap Monitoring Fabric is a next-generation, multi-tier, scale-out solution that leverages commodity bare-metal switches and software defined networking (SDN) design principles. The Big Tap Controller fully manages multi-tenant monitoring policies, provisions the fabric, programs the forwarding paths of monitored flows, and centrally controls all switches and their interconnections. This enables data center wide monitoring with the ability to tap every rack and send it to any tool. With the ability to tunnel monitoring traffic, this capability is being extended to every location across the enterprise. In addition to supporting TAP/SPAN aggregation, flow filtering, replication and load balancing, Big Tap can also leverage Network Packet Brokers (NPBs), attached as service nodes, for packet modification functions such as deduplication and packet slicing. Big Tap will redirect designated flows to one or more NPB service nodes in a service chain, as defined in the associated monitoring policy, prior to delivering these flows to Riverbed SteelCentral.

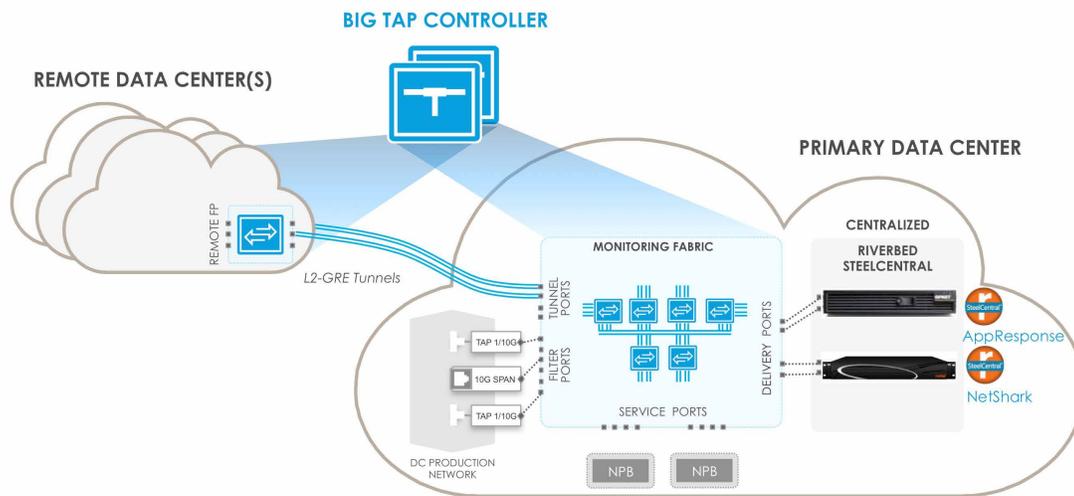


Figure 1: Riverbed SteelCentral deployed with the Big Tap Monitoring Fabric

HOW THE SOLUTION WORKS

Powered by an external SDN Controller, the Big Tap Monitoring Fabric is a multi-tenant solution that filters, aggregates, load-balances and replicates traffic to all connected security and monitoring tools. For data center wide scaling, the Big Tap monitoring fabric is typically deployed in a two or three-tier topology. A layer of “filter” switches aggregates TAP and SPAN ports and another layer of “delivery” switches connects the tools. An optional layer of “core” switches can be inserted between the layers for large-scale deployments. Traffic passing through the filter and tunnel ports, if connected to remote locations, is subject to user-defined policies for filtering, replication and modification via third-party services such as NPBs. It is then delivered to the Riverbed SteelCentral NetShark or AppResponse devices connected to the delivery layer.

The SteelCentral application-aware network performance management platform enables end-to-end monitoring, efficient troubleshooting and proactive alerting by integrating continuous, real-time packet-based data with the flow data from the production network as well as Riverbed® SteelHead™ appliances. The appliances ensure comprehensive monitoring with detailed packet capture and analysis necessary for rapid problem rectification. With this information, problems that required four to eight hours to resolve are identified in seconds and resolved in minutes saving significant time and money.

KEY SOLUTION BENEFITS

- **Flexible, scale-out deployment:** Thousand+ 1G/10G/40G TAP and SPAN ports can be connected to the Big Tap Monitoring fabric, and any network traffic can be directed to any of the connected Riverbed SteelCentral devices at any time. Now the fabric can be extended across L3 WAN to enable monitoring of remote DCs/POPs, colo facilities, campus/branch locations, as well as retail sites. This allows centralization of monitoring tools and staff, thus dramatically reducing costs while allowing operations to monitor networks across the organization.

- **Massive operational simplicity:** The solution is based on SDN architecture with a logically centralized, programmable Big Tap Controller that controls and manages all switches, tenants and policies through a single-pane. As more switches, policies or tenants are added, operational overhead of managing the fabric is negligible. SteelCentral tools can access any data center flow through policies created on the Big Tap Controller.
- **Tremendous cost savings:** The Big Tap monitoring fabric, based on bare metal switches and the Switch Light OS, interacts with the Big Tap Controller to form the monitoring fabric. This disaggregation of hardware and software provides customers with choice and allows tremendous cost reduction. For the same budget, customers are able to broaden SteelCentral's monitoring scope.
- **Multi-tenant tool and tap sharing:** Multiple operations teams, each with its own SteelCentral tools, can monitor data center wide traffic. When several teams decide to monitor the same flow, the Big Tap monitoring fabric automatically replicates the flow and delivers it to the respective SteelCentral tools.

ABOUT RIVERBED

Riverbed Technology, Inc. at more than \$1 billion in annual revenue is the leader in Application Performance Infrastructure, delivering the most complete platform for Location-Independent Computing. Location-Independent Computing turns location and distance into a competitive advantage by allowing IT to have the flexibility to host applications and data in the most optimal locations while ensuring applications perform as expected, data is always available when needed, and performance issues are detected and fixed before end users notice. Riverbed's 25,000+ customers include 97% of the Fortune 100 and 96% of the Forbes Global 100. Learn more at www.riverbed.com.



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