

SteelCentral AppResponse 11

Faster insights equals better user experience. When it comes to improving network and application performance, it's often a race against time. Every minute spent troubleshooting is a minute your users are unproductive and your customers could be researching the competition.

The Business Challenge

Today's network manager is facing a much different network than a few years ago. There are a whole host of new architectures and technologies that are being adopted within the enterprise that can affect network performance. For example, Voice over Internet Protocol (VoIP) is one of key drivers to upgrade the WAN and real-time video and on-demand streaming can represent up to 75% of network traffic. Hybrid-WAN and software-defined WAN are also seeing significant uptake. Add to that the ongoing trends of virtualization, mobilization, and webification of applications and the network team has their hands full trying to learn these technologies, how they affect network performance, and whether or not their monitoring solution is up to the job.

SteelCentral AppResponse 11

Riverbed® SteelCentral™ AppResponse 11 delivers full stack analysis—to end-user experience. It provides powerful, flexible network and application analytics and workflows to speed problem diagnosis and resolution. Functional immediately out of the box with pre-defined insights and a rich variety of performance metrics, SteelCentral AppResponse 11 helps you get answers fast.

SteelCentral AppResponse 11 combines network forensics and historical analysis, application analytics, and end-user experience monitoring in a single solution so you have everything you need at your fingertips to resolve performance issues quickly. And it supports a diverse group of users—NetOps, security, AppOps, IT management, line of business, and cross-functional “tiger” teams—from novice to experts.

AppResponse 11 passively monitors the network and collects packet data for continuous, real-time and historical monitoring and fast troubleshooting. It indexes, and stores the packets in such a way that there is no need for file transfers when performing forensic analysis. By continuously recording the packets traversing the network, rich troubleshooting details are always available when you need them, saving time and money by minimizing the effect downtime has on business productivity and reducing or avoiding business-stopping slowdowns or outages.

In addition, as part of the SteelCentral platform, AppResponse 11 integrates with SteelCentral NetProfiler for end-to-end network monitoring and reporting, and with

SteelCentral Portal for blended application, network, infrastructure, and end-user experience monitoring. There is also one-click access to SteelCentral Transaction Analyzer Plus for detailed transaction modeling for root-case analysis and predictive studies.

Using simultaneous multi-stage analytic processing, SteelCentral AppResponse 11 delivers powerful capabilities, such as automatic application discovery, rich application insights, response time decomposition and end-user experience monitoring for web applications.

SteelCentral Packet Analyzer Plus is the graphical packet analysis software for SteelCentral™ AppResponse 11. It facilitates the rapid isolation of the specific packets needed to diagnose and troubleshoot complex performance issues and enables you to quickly analyze multi-terabyte packet recordings on remote appliances

without having to transfer large packet capture, files across the network.

Highlights of SteelCentral AppResponse 11:

- Out-of-the-box, pre-defined insights based on deep packet inspection (DPI)
- Expert, “pivot and drill down” analysis
- New transactional performance metrics speeds analysis by reducing the need to go to the packet
- Response Time Composition Chart with 8 different metrics showing network versus server time
- Passively monitors browser load time for the page and object level
- One click access to packet analysis

Key Benefits

Minimize Downtime

- Rapidly identify and triage problems
- Ensure optimal network and application performance

Improve Productivity

- Enable operational consistency
- Facilitate collaboration and reduce “finger pointing” among IT teams

Reduce Costs

- Protect user experience and minimize impact of downtime on business
- Reduce risks and avoid costs through strategic planning

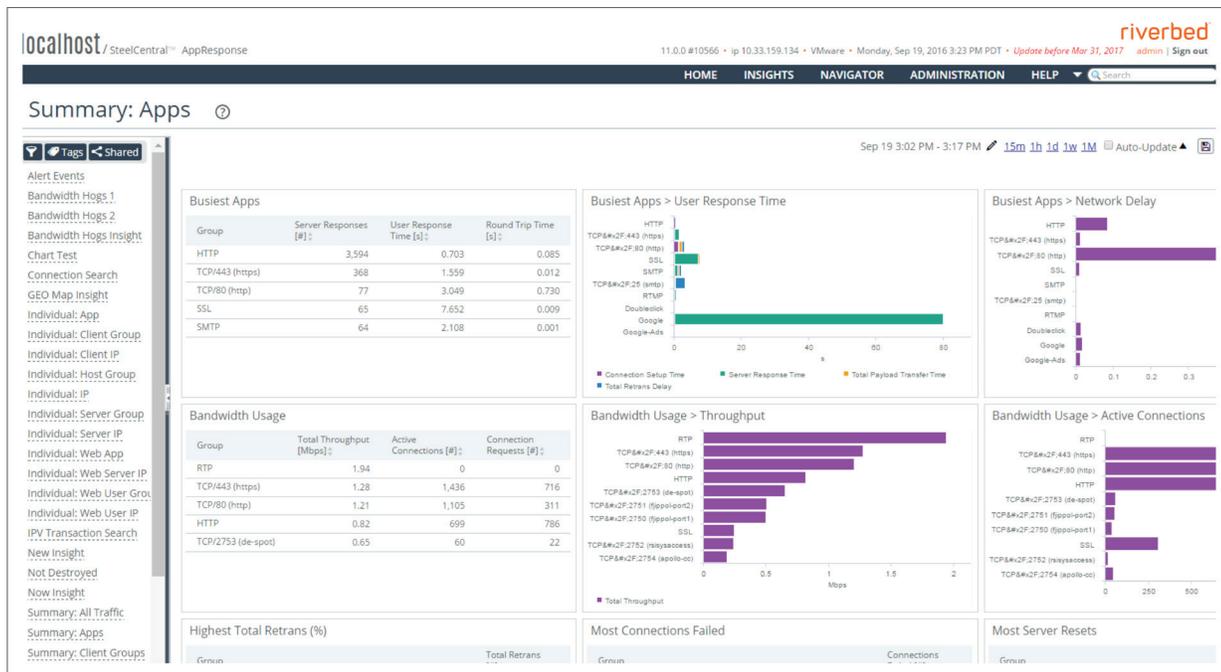


Figure 1

AppResponse 11 insights provides pre-defined, intelligent analysis and workflows that are functional right out of the box.

Add-on Modules

SteelCentral AppResponse has a variety of optional modules that provide specialized analysis. These modules include:

Application Stream Analysis Module (ASA)

The ASA module provides real-time and historical network analysis. You can roll-up metrics at various granularities and store the aggregate data so you can get to the answer faster without having to go to the packets as often. In addition, the ASA module also provides rich response time composition metrics so you can quickly determine where to focus your troubleshooting efforts—the network or server.

Web Transaction Analysis Module (WTA)

The WTA module offers real-time web application performance analysis for monitoring business transactions. It auto discovers all URLs and end-user activity to simplify monitoring. View end-user experience for web pages as well as detect page errors, page rates, unique users, and more. Geographic heat maps make it easy to focus triage efforts of critically affected users and sites, whether they are decrypted or not.

Database Analysis Module (DBA)

The DBA module identifies the impact of the database on end-to-end application performance. By monitoring database performance at the transaction level, you can identify the particular SQL statement or database call responsible for application delay and equip your database team with actionable information. Its agentless approach introduces zero overhead on database operation and does not require privileged access to database systems or database diagnostics logging.

Unified Communications Analysis Module (UCA)

The UCA module provides real-time and historical analysis of voice and video performance calls with the ability to drill-down to the underlying problem and understand the interaction of voice and data traffic. Easily troubleshoot the source of poor call quality with real-time, web-based dashboards for quick resolution. Proactively monitor voice call quality and resolve issues before they affect users. Set meaningful SLA's based on how call quality is affecting the business.

Key Features

Network Forensics

The Shark Packet Analysis (SPA) module delivers near real-time traffic analysis of packet events with 1-second granular displays with microsecond resolution.

Deep packet inspection (DPI)

- Auto-recognizes more than 1700 popular business and recreational applications

Multi-capture jobs

- Perform multiple, separate capture jobs on a SteelCentral AppResponse 11 appliance and dedicate different amounts of storage or filtering

Selective recording

- Record and store just the right amount of packet data and also extend the amount of packet data and length of time that it can be stored. Capture and store just the header, the header and the first xx bits, or the whole packet. You decide

Smart packet indexing

- Real-time indexing of packet data means you can quickly and easily search terabytes of data—without having to drag the packets across the network

Network-layer analysis

- Provides support for network-layer analysis, such as ARP, CIFS, microburst, broadcast and multicast issues

Address management protocols

- Troubleshoot DHCP and DNS issues

Application-specific analysis

- All variations of FIX
- Market Data Feed protocols: Aquis, Euronext, PITCH, LSE, CTS, CQS, OPRA, UQDF, UTDF, OMDf, IC, TMX
- Market Data Gap Detection views
 - Market Data Gaps Over Time
 - Market Data Gap Details
 - Market Data Gaps Overview
- VDI: VMware PCoIP, Citrix ICA and CGP

Network Analytics

The Application Steam Analysis (ASA) module offers layer 4 TCP and UDP metrics with historical summary information.

Real-time and historical data analysis

- Monitor live performance for all users all the time, and alert against SLAs
- Roll-up metrics at 1 min., 5 min., 1 hour, 6 hour, and 1 day granularity
- Store data up to 3 years
- Stores aggregate data and individual flows and pages so you can get to the answer faster without having to go to the packets as often
- Analyze historical information for trending and capacity planning

Flexible data analysis

- Continuously automated calculation of 60+ TCP and UDP metrics
- Aggregate traffic by applications, users, servers, clients, conversations, and host groups. Define a hierarchy of host groups
- Understand network bandwidth utilization by remote offices

Response time analysis

- Measure responsiveness and performance for internal and external users of your enterprise applications
- Response Time Composition Chart graphically shows network versus server delay to quickly pinpoint where to focus your troubleshooting efforts. Displayed metrics include: connection set up, server response, payload transfer, retransmission delay, network round trip time (out), network round trip time (in), user response
- True min and max metrics
 - User Response Time
 - Server Response Time
 - Round Trip Time

Web Application Analysis

The Web Transaction Analysis (WTA) module provides real-time web application performance for monitoring business transactions.

Web page time analysis

- Auto-discovers all URLs, page families and end-user activity
- View metrics by Slow Pages, Page Views, Page Time, Network Busy Time (per page), Server Busy Time (per page), Unique Users, and Unique Affected Users

End-user experience monitoring (EUM)

- View response time for web pages for a true end-user perspective of performance. Passively monitors browser load time for the page level and object level of a web page or group of web pages as monitored as a single transaction

Web transaction performance

- Detects abnormal web transaction performance and directly alerts on common web application problems such as page errors, response/page, page rate, # of slow pages, and slow page times

TruePlot®

- TruePlot can render hundreds of thousands of transactions at once to reveal patterns hidden by traditional line charts. TruePlot doesn't average-out spikes and can clearly differentiate symptoms vs root causes

Group and monitor related pages or users

- Easily monitor a group of related web pages in a common way. Customize monitoring to flexibly map your web pages to an application. Group page views together or separate pages that are monitored together by default
- Group originating IPs of users who are using/downloading the pages

Geographic heat map

- Geographic display of performance and usage for Web applications and page views to focus triage efforts on the most critically affected users and sites
- View by web application, region, platform, and browser type

Real-time SSL decryption

- Able to decode HTTPS when the customer has the key

Database Analysis

The Database Analysis module (DBA) provides automatic recognition and real-time analysis of major SQL databases.

Auto recognition

- Automatic recognition of databases on all network addresses and ports
- Major SQL databases recognized

Database analysis

- Layer 7 packet decoding acquires database sessions, SQL queries, stats and timing info
- Full-text parsing and standardization of every SQL query
- Multi-key access to database sessions and SQL queries

VoIP and Video Call Analysis

The Unified Communications Analysis module (UCA) provides real-time and historical analysis of voice and video performance calls with the ability to drill-down to the underlying problem.

- Automatically recognizes more than 140 voice, audio and video codecs, including SIP, H.323 and Cisco SCCP
- Infer call quality from RTP or decrypt encrypted signaling
- Define your own call quality definitions by codec
- Signaling ladder diagram is in SteelCentral Packet Analyzer Plus

UCA Insights

- All UC traffic - VOIP/Video summary shows all UC traffic being monitored individually
- UC Host Group - Shows VOIP/Video load, performance and network anomalies of an individual host group
- Summary: VOIP/VIDEO CALL - Summary of individual calls

UC Navigator Analysis

- All UC Traffic, Call User Groups, Media Types, Individual Calls, Individual Channels

Web UI

Internationalization / Localization

- Simplified Chinese (zh_CH)

Insights

- Pre-defined, intelligent analysis and workflows that are functional right out of the box. Enables novice users to use AppResponse 11 and gain expertise over time. Create, save and share your own insights

Navigator

- Expert analysis with multi-dimensional drill down and pivots. Allows you to explore all dimensions of your analysis

Search

- Flexibly search for anything that is stored in the database, such as host groups, applications, IPs, IP conversations, and pages

Reporting

- Share analysis with colleagues and executives

Certifications

- USGv6
- FIPS 140-2

Miscellaneous

Authentication

- SAML-2.0, RADIUS/TACACS+ authentications

Alerting

- Detailed, flexible alerting engine with advanced filters to minimize false positives
- Scheduled PDF reporting
- Able to save and email report snapshots
- Rich Policy details describes event

Device Health

- Storage Monitoring checks storage hardware status and health

Customizable Storage

- AppResponse 11 offers two storage modes that optimize retention of either packets or metrics and allows the one-time switch to metrics storage

Comparison to earlier times

- Yesterday, last week, 4 weeks ago

Integrations

SteelCentral NetProfiler

- SteelCentral AppResponse 11 exports flow to [NetProfiler](#) for end-to-end monitoring and reporting

SteelCentral Transaction Analyzer Plus

- SteelCentral AppResponse 11 provides one-click access to [SteelCentral Transaction Analyze Plus](#) for detailed transaction modeling for root-case analysis and predictive studies

SteelCentral Packet Analyzer Plus

- [SteelCentral Packet Analyzer Plus](#) is graphical packet analysis software for SteelCentral AppResponse 11

SteelCentral Portal

- SteelCentral AppResponse 11 integrates with [SteelCentral Portal](#) for blended viewing of end-user experience, application, network, UC, and infrastructure performance

Network Tap Aggregators

- SteelCentral AppResponse 11 adopts the precision time stamps from network tap aggregators such as Gigamon, Anue/IXIA, cPacket, and Arista

Navigator/Individual Page Views

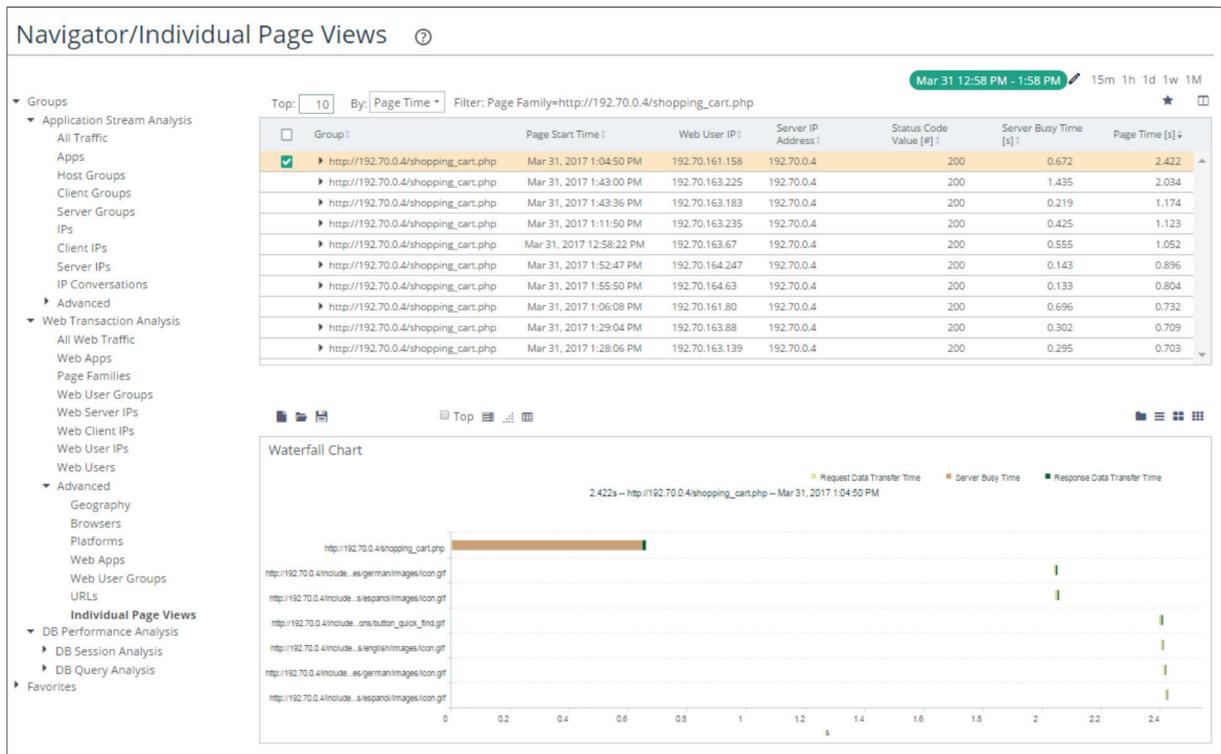


Figure 2
The Web Transaction Module analyzes web applications. Individual page views breaks the application into all its parts and monitors them separately. In the top screen we selected the shopping cart. It gives us the page time, server busy time, status code value, etc. In the bottom screen we see the waterfall chart for that page family and you can immediately see where the problem lies—the shopping cart has extremely long server busy time.

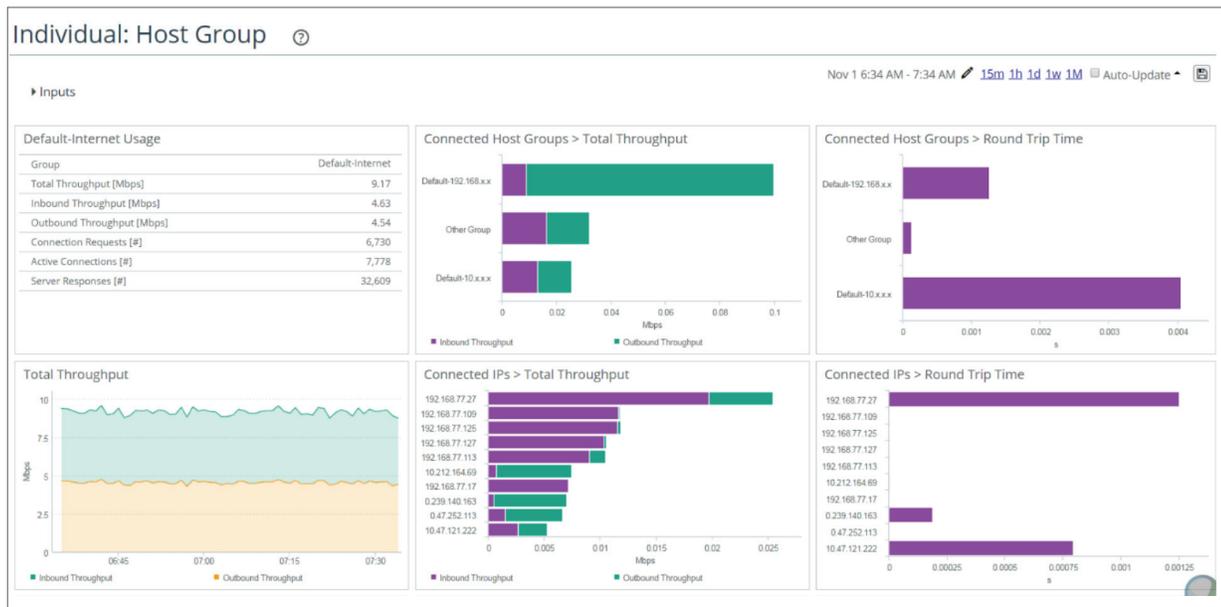


Figure 3
For reporting and alerting it is often convenient to track similar devices as a group. For example, the traffic statistics for all hosts in the same geographical location can be aggregated and reported as one host group. Similarly, all web servers or all database servers can be tracked as a host group. A host group can contain individual members and one or more other host groups. The Navigator and Insights features can report selected performance metrics for host groups. Network usage policies can be defined for host groups and alerts sent when the policies are violated. A host group is defined by the IP addresses of its members. AppResponse 11 is shipped with four default host groups: one for each of the three blocks of reserved IP addresses and one for all public IP addresses.

Navigator/TCP Connections

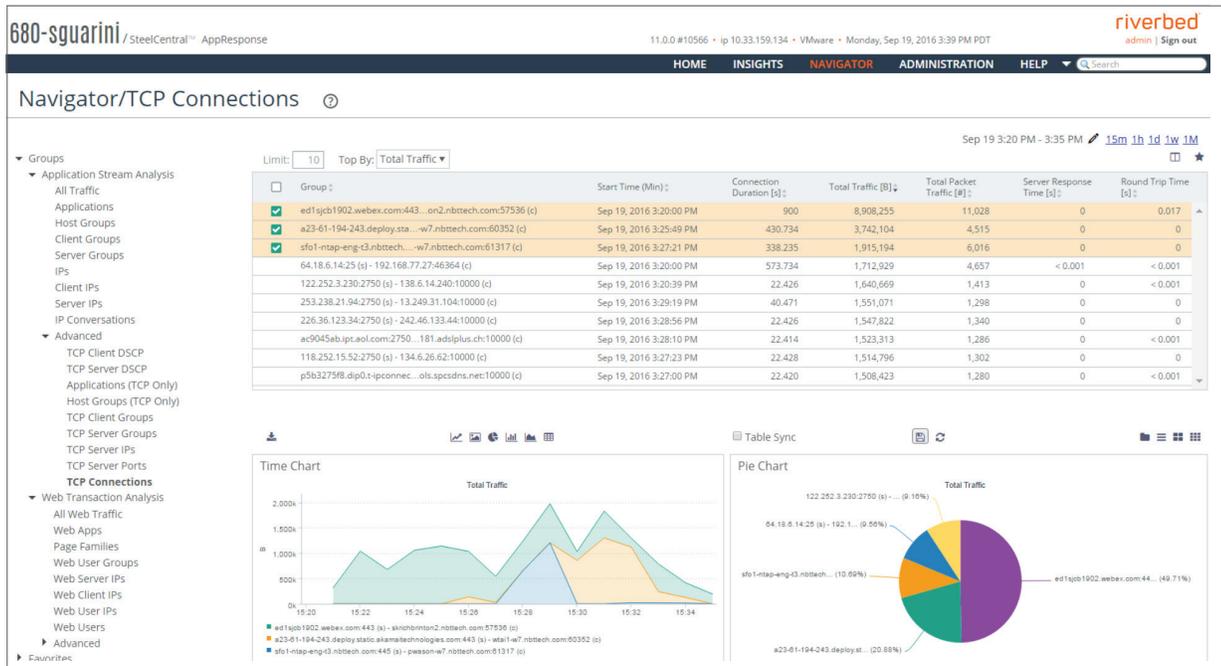


Figure 4
SteelCentral AppResponse 11 is extremely flexible. Here we decided to analyze three TCP connections. We do that by simply selecting them. The corresponding charts automatically sync with the selected elements.

Navigator/Applications

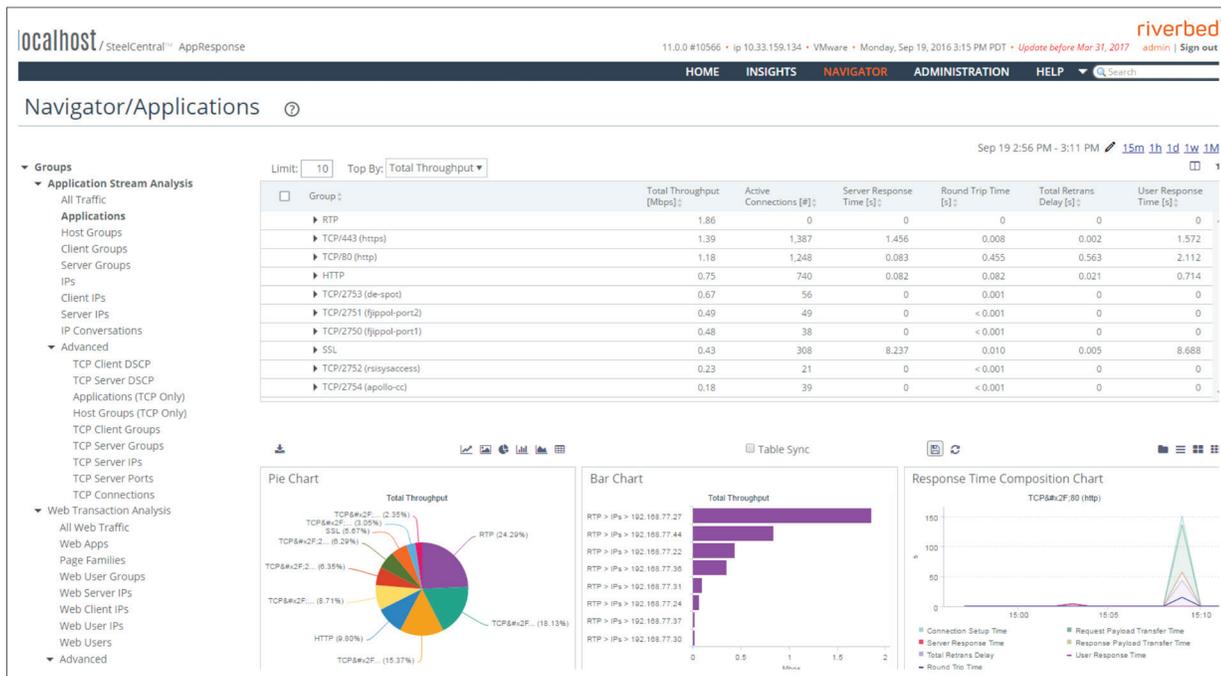


Figure 5
Navigator enables expert analysis with multi-dimensional drill down and pivots. It allows you to explore any and all dimensions of your analysis.

Supported Product Models

SCAN xx70 Models

Model	SCAN-02170	SCAN-04170	SCAN-06170	SCAN-08170
Size	1U	2U	2U	2U
Storage	8TB	32TB	-	-
Supported Storage Units	N / A	N / A	8	16
Max Storage Capacity	8TB	32TB	576TB	1.15PB
NIC Slots	1	2	2	2
NIC Cards	4x1GE Cu or Fiber or 2x10GE Fiber	4x1GE Cu or Fiber or 2x10GE Fiber or 4x10GE Fiber	8 x1GbE (Copper or Fiber) or 8 x10GbE ports (Fiber) or 4 x1GbE + 4 x 10GbE (Fiber) or 2 x40GbE (Fiber)	

Storage Units

Model	SCAN-SU-48TB	SCAN-SU-72TB
Size	2U	2U
Storage	48TB	72TB

SteelCentral NetShark 2170, 4170 and 6170 users with active maintenance contracts can upgrade to AppResponse 11 free of charge.

ARX xx00 Models

Model	AppResponse 1200	AppResponse 2200	AppResponse 3300	AppResponse 3800	AppResponse 4300	AppResponse 5100	AppResponse 6000
Size	1U	1U	2U	2U	4U	4U	5U
Storage	3TB	3TB	6TB	16TB	29TB	42TB	48TB
Supported Storage Units	N / A	N / A	N / A	N / A	2	2	3
Max Storage Capacity	3TB	3TB	6TB	16TB	173TB	186TB	264TB
NIC Slots	3	3	4	4	4	2	2
NIC Cards	3x1GE Cu or Fiber	3x1GE Cu or Fiber	4x1GE Cu or Fiber		4x1G (SFP)	2x10G (SFP+)	2x10G (SFP+)

SteelCentral AppResponse 9 customers on the above systems with active maintenance contracts can upgrade to AppResponse 11 free of charge.

SteelCentral AppResponse Virtual

Model	VSCAN-00100	VSCAN-00500	VSCAN-02000	VSCAN-FLOW
Secondary Storage	Up to 100GB	Up to 2TB	Up to 8TB	Up to 100GB
Hypervisor	VMware ESXi 5.5 and 6.0			

Gartner Magic Quadrant Recognition

Riverbed is a five-time leader in the Gartner Network Performance Monitoring and Diagnostics (NPMD) [magic quadrant](#).*

*Gartner does not endorse any vendor, product or service depicted in its research publications, and does not advise technology users to select only those vendors with the highest ratings. Gartner research publications consist of the opinions of Gartner's research organization and should not be construed as statements of fact. Gartner disclaims all warranties, expressed or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.