

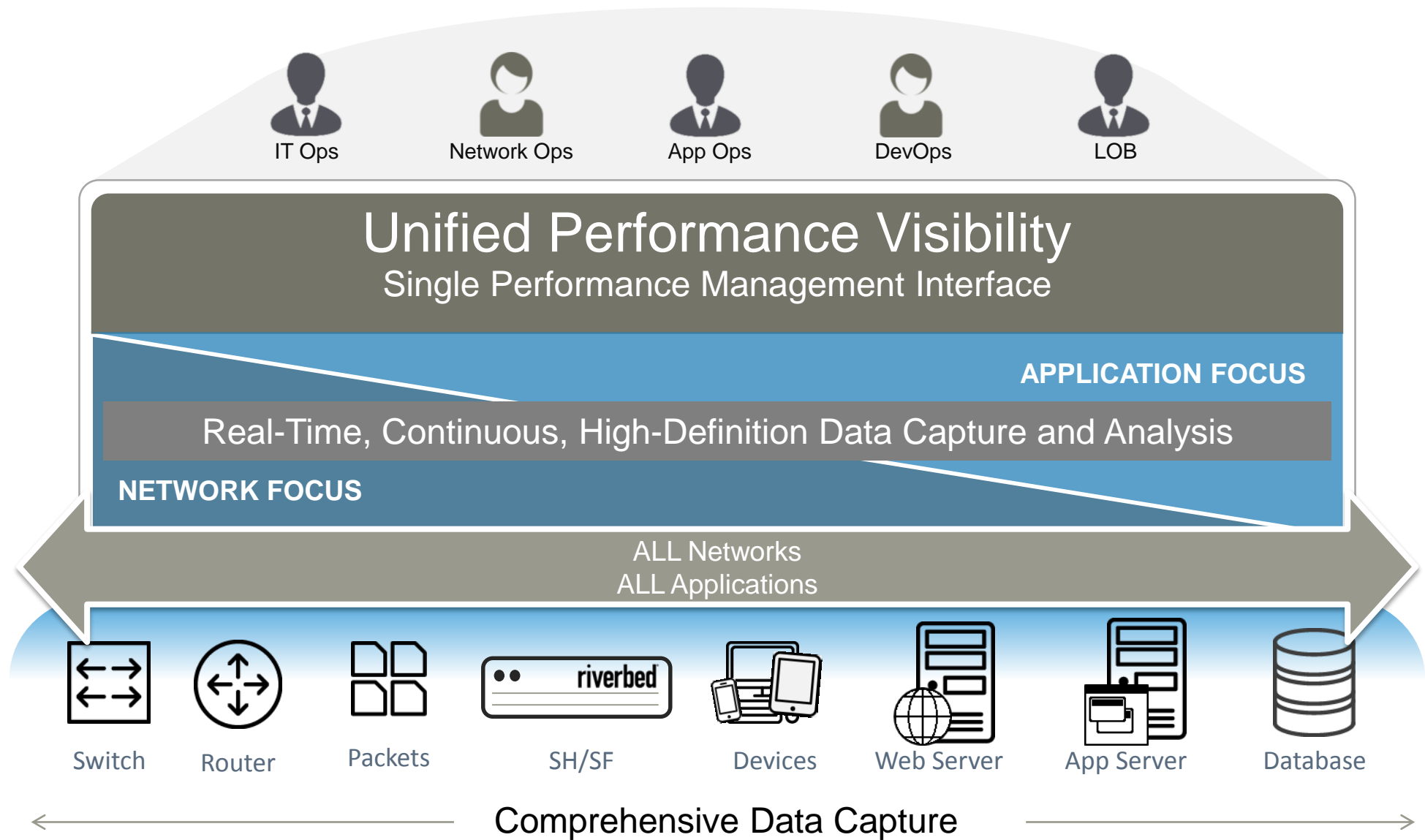


SteelCentral NPM

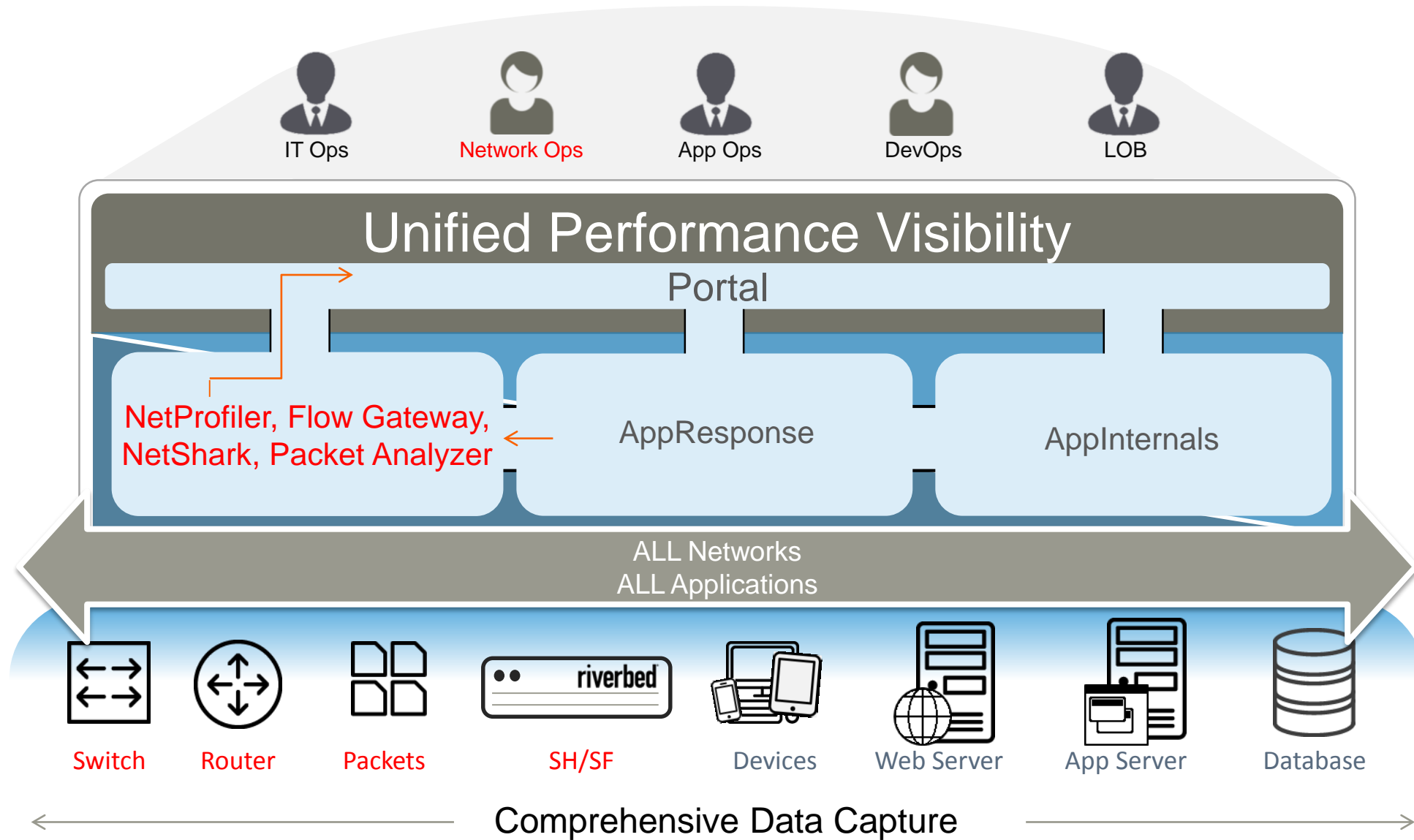
NetProfiler, NetShark, Flow Gateway & Packet Analyzer

December 2015

riverbed®



SteelCentral: Your Command Center for Application Performance



SteelCentral: Your Command Center for Application Performance

SteelCentral NPM

Application-Aware Network Performance Management



SteelCentral NetProfiler
Centralized reporting & analysis



SteelCentral Flow Gateway
Traditional flow collector



SteelCentral NetShark & AppResponse
Packet capture, storage & analysis

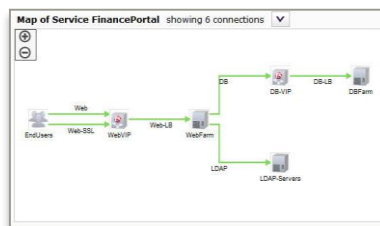


SteelCentral Packet Analysis

See The Total Performance Picture

- Avoid business-impacting performance issues
- Minimize downtime
- Improve IT collaboration

Discover



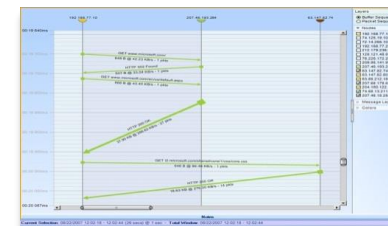
Identify what's important

Monitor & Report

Service Health				
Service Tree	Overall	Connect	User Exp	EFF
Exchange	🟢	🟢	🟢	🟢
Sharepoint	🟢	🟢	🟢	🟢
Oracle	🟡	🟡	🟢	🔴
ERP	🟡	🟡	🟢	🟢
Twiki	🟢	🟢	🟢	🟢

See the whole picture

Troubleshoot



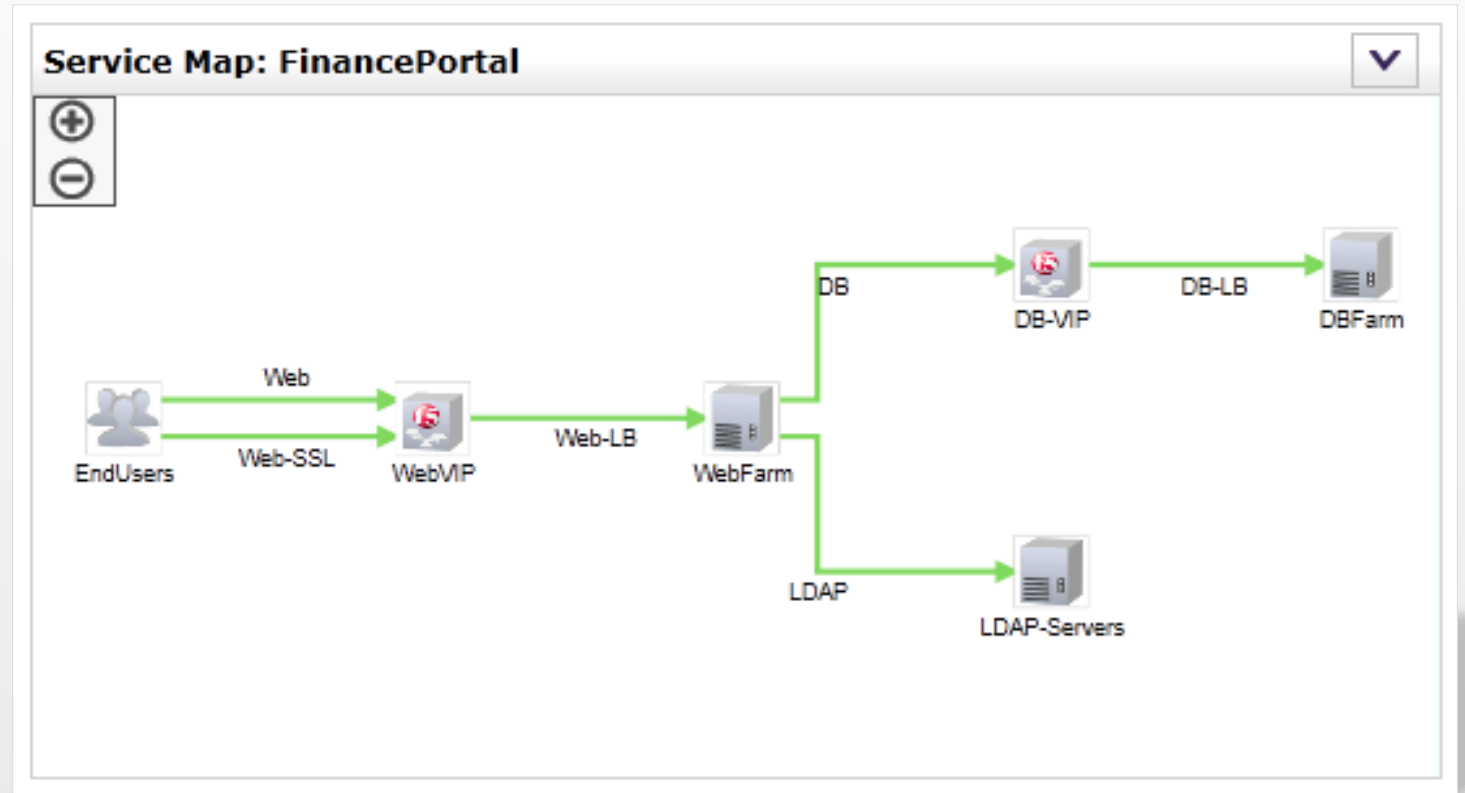
Accelerated triage

With SteelCentral NetProfiler, You Can...

Dependency Mapping

See the Whole Picture

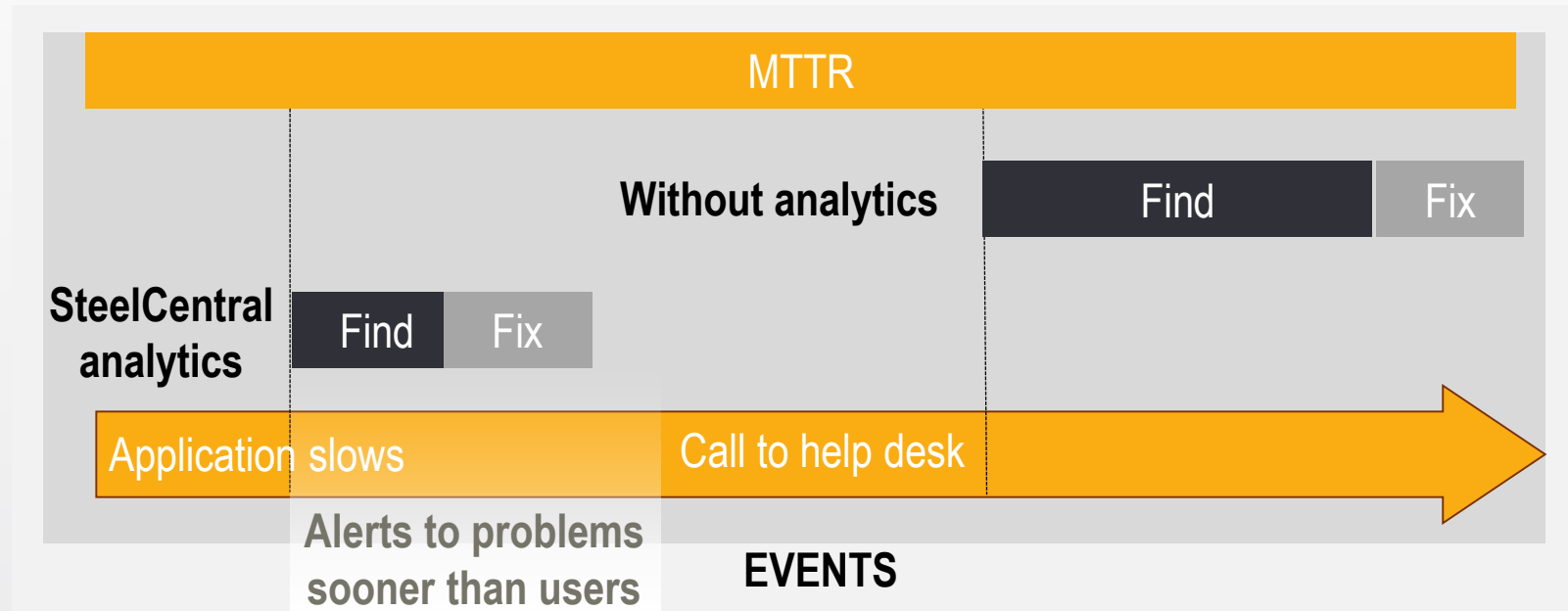
- Understand all components involved in application delivery
- Discover across all tiers of a multi-tier app, including load balancers
- Assist in data center transformations, security and compliance monitoring



With SteelCentral NetProfiler, You Can...

Proactively Identify Problems

- Automate analysis of performance changes
- Proactively identify issues before users notice



With SteelCentral NetProfiler, You Can...

Identify What's Important

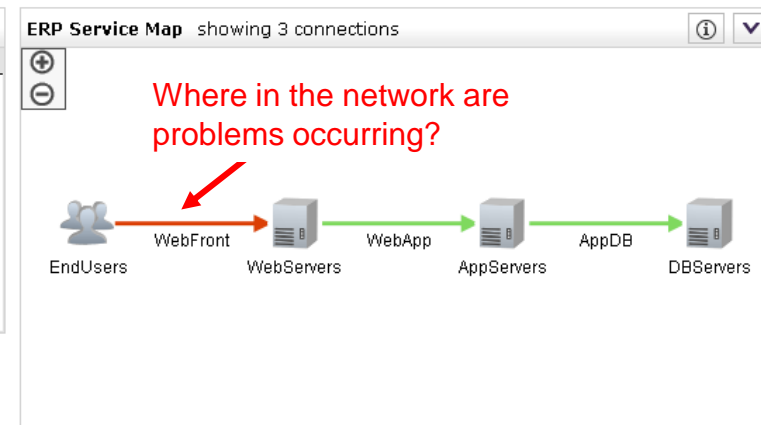
- Quickly understand service elements
- Graphically monitor end-to-end health of critical business apps from the network viewpoint
- Speed problem diagnosis

Dashboard: ERP-Application (admin) Dashboard Options Refreshing in 26 sec [refresh now](#)

ERP Service Health by Location

Service Tree	Overall	ERP
Columbus		
Philadelphia		
Phoenix		
Hartford		
LosAngeles		
Austin		
Seattle		

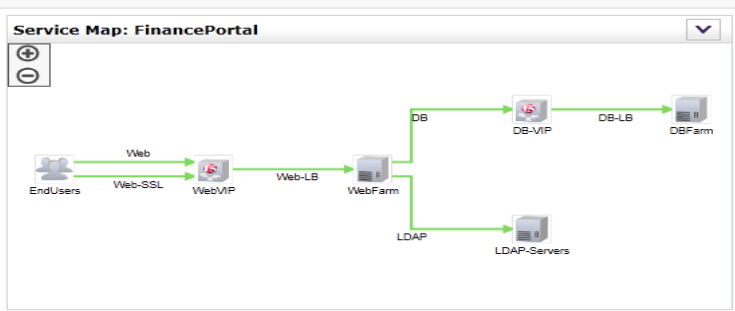
Where geographically are problems occurring?



ERP - Web Servers Summary View Starting 1 min ago 1 - 5 of 5

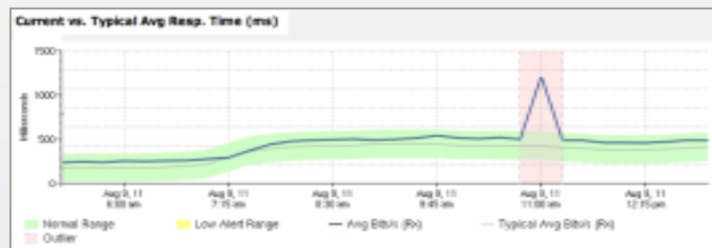
Host	Avg Bits/s	Avg Packets/s	Avg New Connections/s	Avg Net RTT (ms)	Avg Resp Time (ms)	Avg Server Delay (ms)
WebServer-33	1,100,658 (15%)	484.68 (8%)	1.27 (14%)	123	3,977	3,854
WebServer-32	943,094 (13%)	392.62 (7%)	1.00 (11%)	122	127	6
WebServer-34	2,114,057 (28%)	2,035 (35%)	2.60 (29%)	47	52	6
WebServer-30	1,561,726 (21%)	1,311 (23%)	1.95 (22%)	68	74	5
WebServer-31	1,746,499 (23%)	1,529 (27%)	2.13 (24%)	65	70	5
Total 1	7,466,034 (100%)	5,752 (100%)	8.95 (100%)			

Putting it altogether for a competitive advantage



Discover: Quickly identify all components involved in delivering an application service to end users

Wizard automates dashboard creation



Analyze: Automates analysis of performance changes to provide early warning of problems

Service Tree	Overall	Connect	User Exp	EFF
Exchange	Green	Green	Green	Green
Sharepoint	Green	Green	Green	Green
Oracle	Red	Yellow	Green	Red
ERP	Yellow	Yellow	Green	Green
Triki	Green	Green	Green	Green

Dashboards: At-a-glance view into end-to-end application health

With SteelCentral NetProfiler, You Can...

Find the Problem Faster

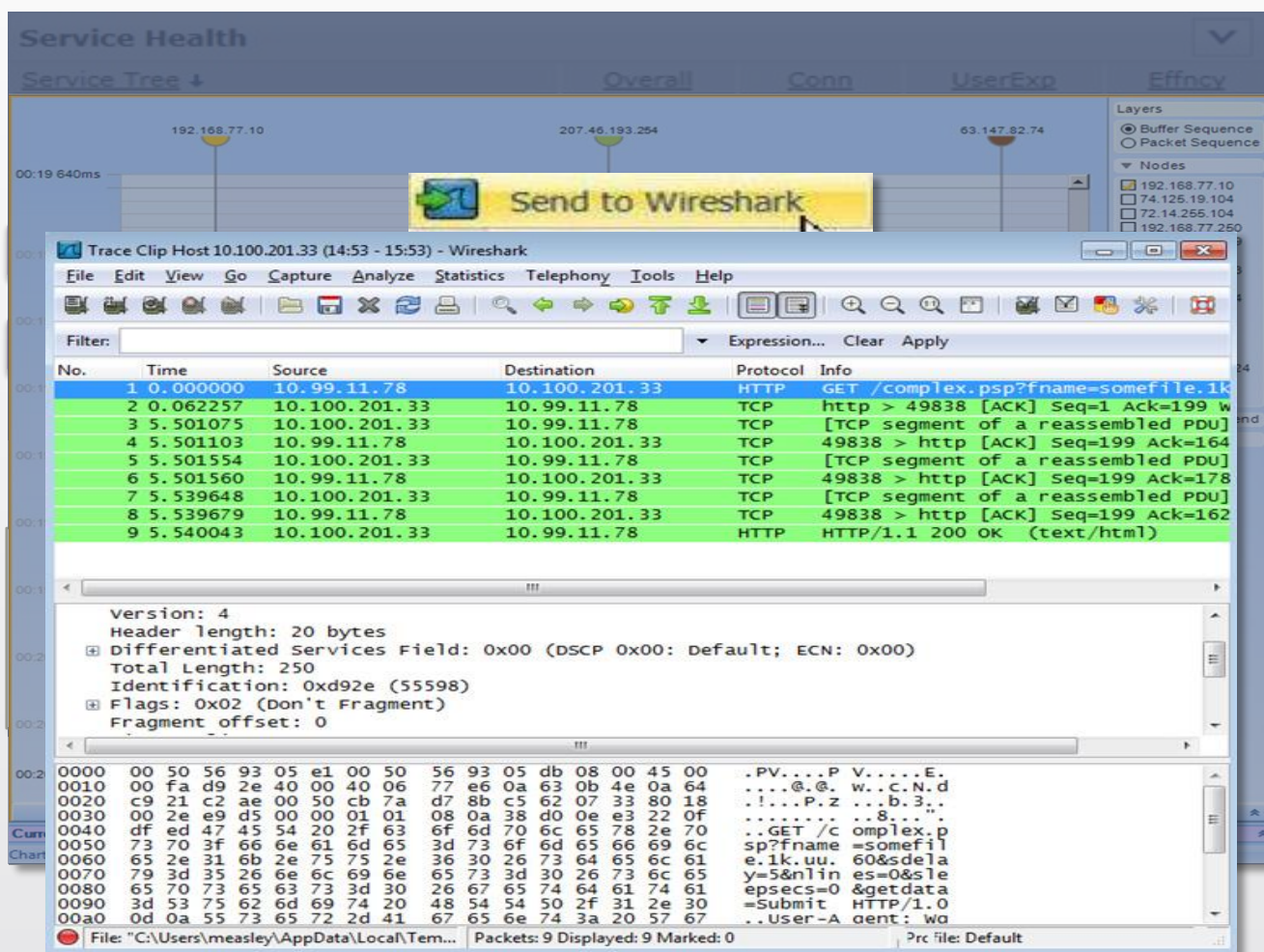
- Business intelligence, not data
- Contextual evidence streamlines diagnosis
- Consistent views, metrics & workflows

The screenshot displays the SteelCentral NetProfiler Transaction Analyzer interface. The window title is "Transaction Analyzer: 1-16 - 1-17@10.173.107.103-04-29-2015 06-25-57". The menu bar includes File, Edit, View, AppDoctor, Simulation, Reports, Capture, Advanced, Windows, and Help. The toolbar contains various icons for file operations, analysis, and navigation. The main window is divided into three panes: Tree View, Tier Pair Circle, and Data Exchange Chart. The Tree View shows a hierarchy of transactions, with the selected transaction being "HTTP GET /simple.psp?fname=somefile.1k.uu.30&nlines=0&sleepsecs=0&getdata=Submit". The Data Exchange Chart pane displays a table of transaction data.

Source	Destination	App Bytes ->	App Bytes <-	Start Time
10.100.201.33	10.100.202.1	0	8,562	0.0000
10.100.201.33	10.100.202.1	0	2,854	0.2515
10.100.201.33	10.100.202.1	0	2,854	0.7840
10.100.201.33	10.100.202.1	0	2,854	1.4570
10.100.201.33	10.99.12.33	6,514	752	0.0116
10.100.201.33	10.99.12.33	1,639	0	0.0116
10.100.201.33	10.99.12.33	1,625	188	0.0969

Streamlined Troubleshooting

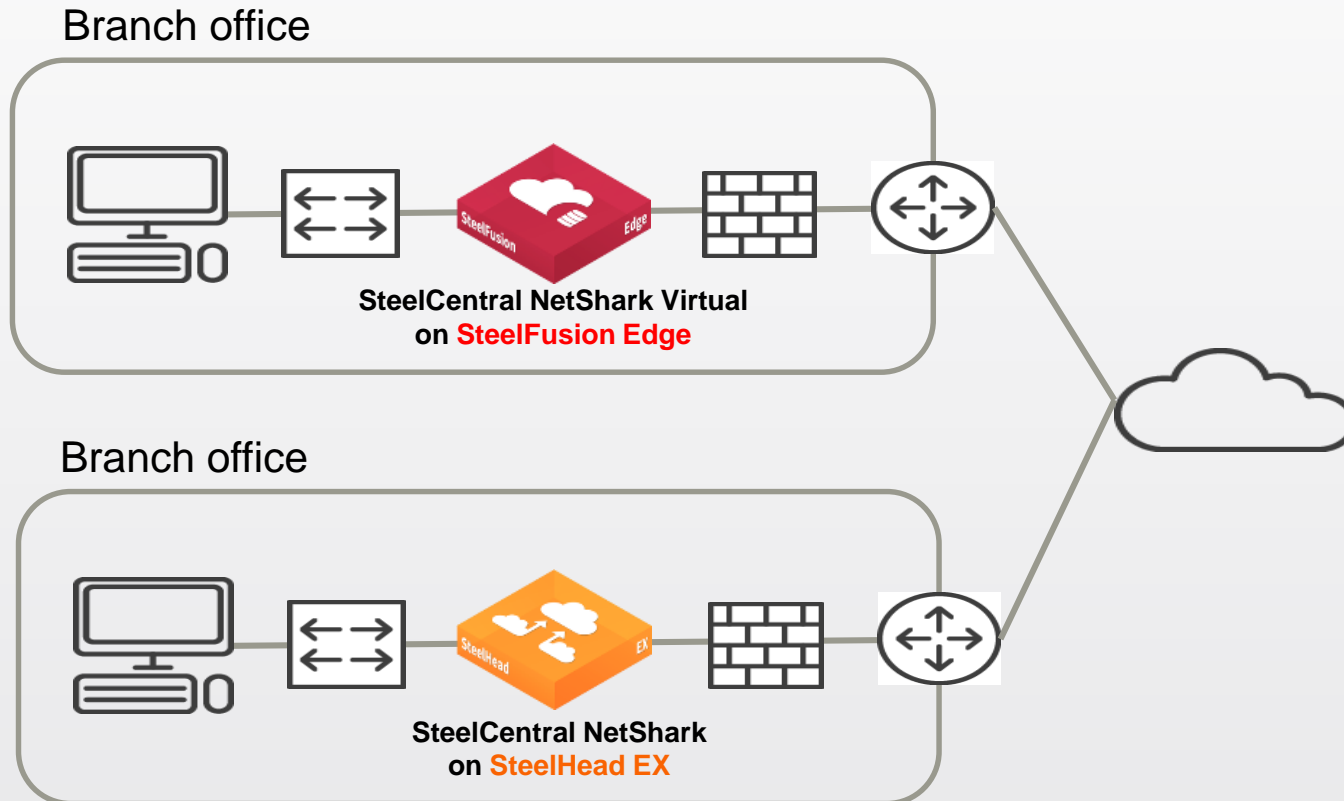
Seamless drill-down to details



- Service-level dashboard shows issue with ERP
- Incident is localized to Web FrontEnd, across all locations
- Fast, flexible drill down to incident report
- Automated analytics
- Seamlessly drill-down into packets
- Packet-level / transaction analysis in SteelCentral Packet Analyzer
- Integrated with Wireshark

Integration with SteelHead / SteelFusion

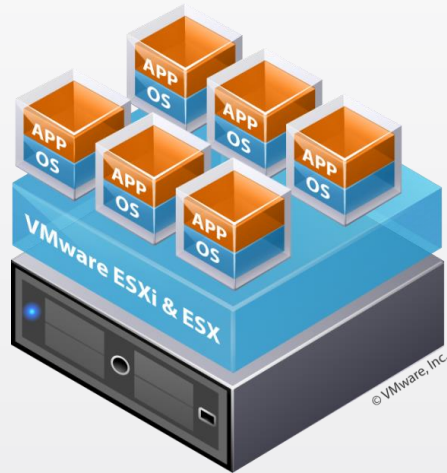
Accelerate Branch Troubleshooting



- Works with SteelHead EX or SteelFusion Edge
 - Real-time app intelligence
 - WAN opt analysis & reporting
 - Guarantee QoS / monitor path selection
 - Response time analysis
- Cost-effectively monitor & troubleshoot branch issues
 - No dedicated monitoring appliances
 - See site-to-site & cloud/SaaS traffic that bypasses datacenter
 - Continuously capture traffic for real-time and historical troubleshooting

Virtualization Monitoring

Only vendor to support all forms of virtualization monitoring



Server Virtualization

- VMware ESXi
- Microsoft Hyper-V



Desktop/App Virtualization

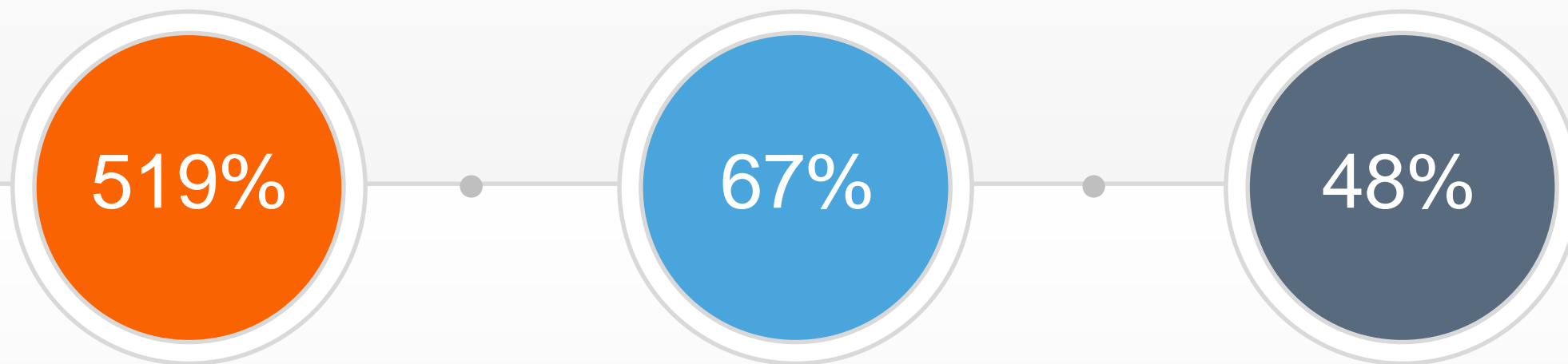
- VMware View
- Citrix XenApp



Network Virtualization

- VMware NSX

SteelCentral customers achieve tremendous benefit



ROI¹

Reduction in
Downtime¹

5x or Faster
Mean Time to
Resolution²

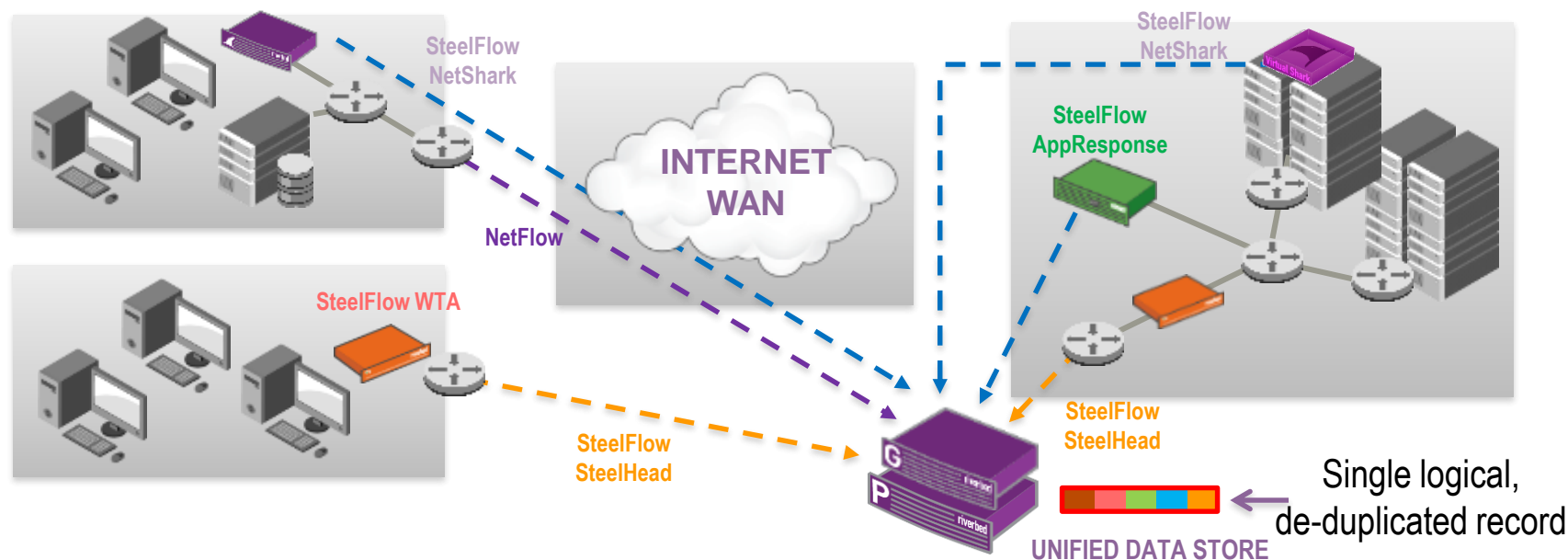
1. IDC, [Realizing Business Value and ROI with Application-Aware Network Performance Management](#), July 2012

2. <http://www.techvalidate.com/tvid/571-6CE-4F3>



Basic Architecture

Comprehensive, Unified Visibility



Unified Data Store combines the same flow across multiple interfaces in single logical, de-duplicated record on the NetProfiler

- **NetFlow** - cost-effective end-to-end visibility (NetFlow, IPFIX, Palo Alto, ASA NSEL, Citrix AppFlow, sFlow, etc.)
- **SteelFlow Net (SteelHead)** - SteelHeads add application mapping, bandwidth reduction, optimized traffic network delay & retransmission metrics
- **MNMP (NetShark)** - NetShark adds application mapping, network delay, server delay, retransmission, and VoIP metrics, access to packets
- **SteelFlow Net (AppResponse)** - AppResponse adds network delay, server delay, retransmission, and VoIP metrics, access to packets

Accurate End-User-Experience for Optimized Web & SaaS Applications

- **SteelFlow WTA** - Remote SteelHeads provide AppResponse web transaction analytics for optimized web & SaaS applications; available in AppResponse web interface

SteelCentral NPM – How Everything Works Together

User
Interface

SteelCentral NetProfiler

Analysis & Reporting

- Service Monitoring
- Behavioral Analytics
- Dependency Mapping
- WAN Opt. Analysis
- QoS Analysis
- Reporting



SteelCentral Packet Analyzer

Packet Analysis

- Packet Analysis
- Transaction Views
- Multi-Segment Analysis



Protocol Decode

SteelCentral Transaction Analyzer

- Transaction analysis
- Performance prediction

SteelCentral Flow Gateway

Flow Collection



NetFlow, Enhanced NetFlow, IPFIX, sFlow, J-Flow, cFlow, Packeteer FDR, Citrix AppFlow, Palo Alto Networks, Cisco NBAR/NBAR2, MediaNet and ASA NSEL

SteelCentral NetShark

Continuous Packet Capture



SteelCentral
NetShark



SteelCentral
NetShark-V



SteelCentral NetShark
on SteelHead EX or
SteelFusion Edge



SteelCentral
AppResponse w/
NetShark module

Telemetry



SteelCentral NetShark

SteelCentral NetShark

Continuous High-Speed Packet Capture

- Continuous packet capture and storage for retrospective analysis of network, security and app issues
- Smart packet indexing for high query performance and low network overhead
- Mix 1GbE & 10GbE interfaces on same appliance
- Unique multiple concurrent capture jobs
- DPI – distinguish between business & recreational apps (1300+ apps)
- Available as appliance or virtual software
 - Integrated into SteelHead and SteelFusion

Types of NetShark



SteelCentral NetShark appliance



SteelCentral NetShark Virtual Edition



SteelCentral NetShark for SteelHead EX



SteelCentral NetShark Virtual for SteelFusion

NetShark Appliances

High-speed packet capture & storage appliances

Description	Form Factor	Total Packet Storage
NetShark 2170	1U	8 TB
NetShark 4170	2U	32 TB
NetShark 6170*	2U	576TB
NetShark Storage Unit 48TB	2U	48 TB
NetShark Storage Unit 72TB	2U	72 TB

NetShark 6170

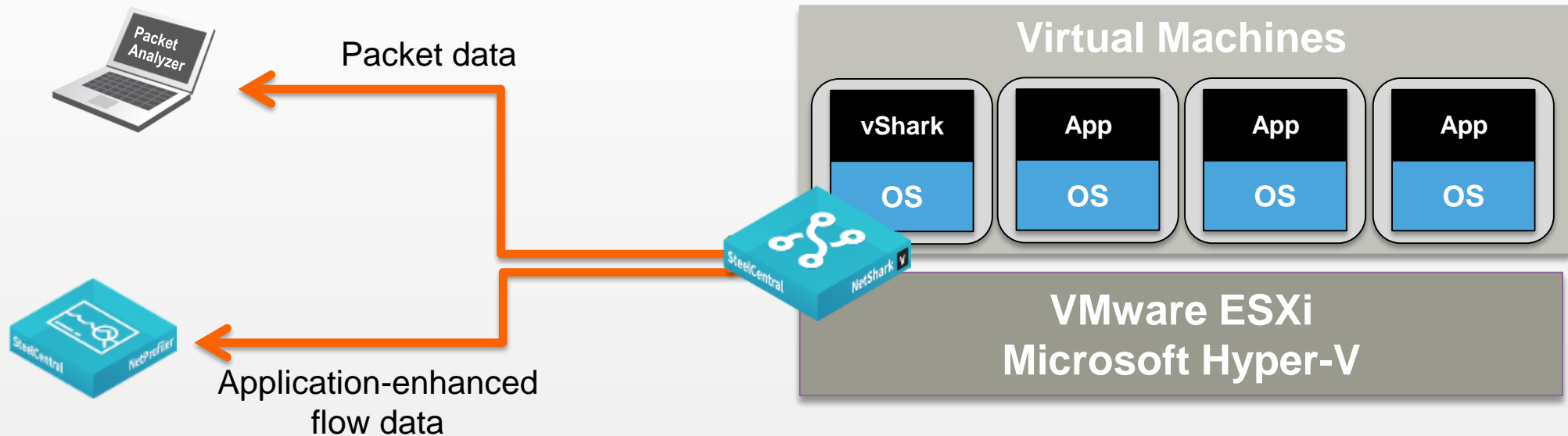


Storage Unit 6170



* Storage Unit required with NetShark 6170. Up to 8 Storage Units can be used.

NetShark-V: Visibility into Virtual Environments



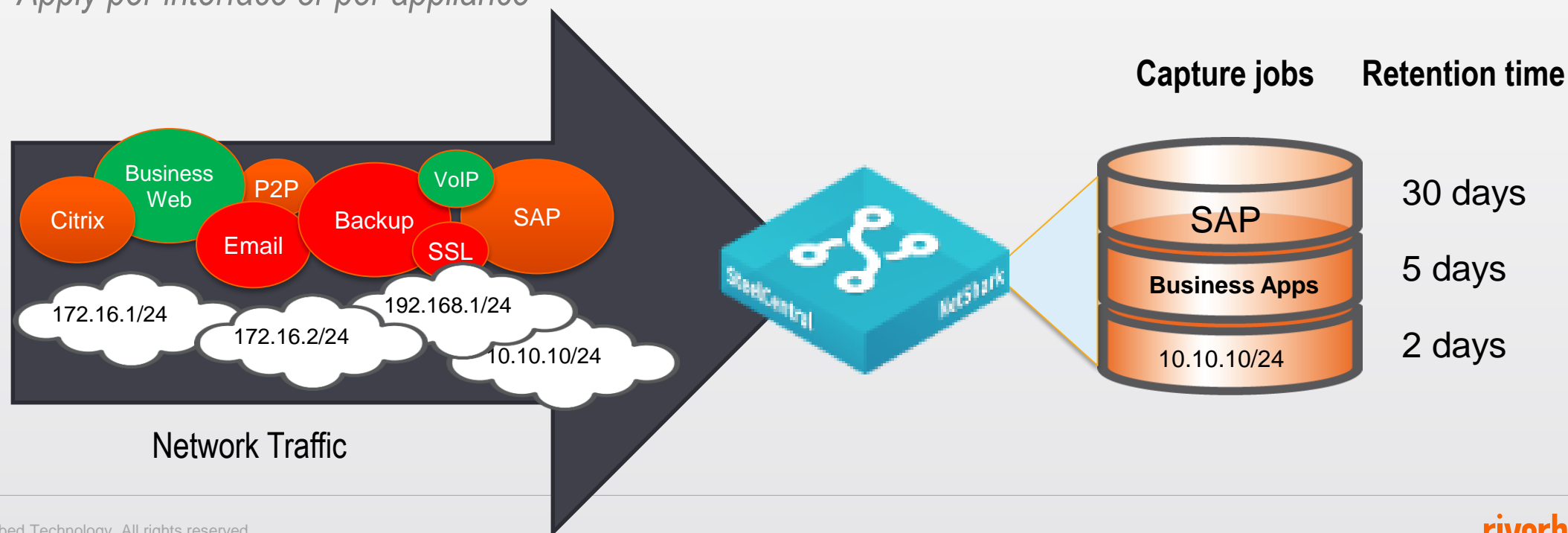
- Real-time visibility into virtualized and cloud environments
 - Software version of NetShark continuous packet capture appliance
 - Monitors all inter-VM traffic crossing VMware vSphere or Microsoft Hyper-V virtual switch
- Simultaneous packet capture and flow export
 - Continuous packet capture for back-in-time analysis via Packet Analyzer
 - Store packets locally or on SAN
 - Works with NetProfiler to provide unified visibility across physical & virtual network
- Available in 3 models: 50GB, 1TB or 2TB

SteelCentral NetShark

Multiple concurrent capture jobs

Run multiple concurrent capture jobs

- *Configure different data retention and wrap policies per capture job*
- *Apply different filters (standard Wireshark capture filters) or packet slicing per job*
- *Apply per interface or per appliance*



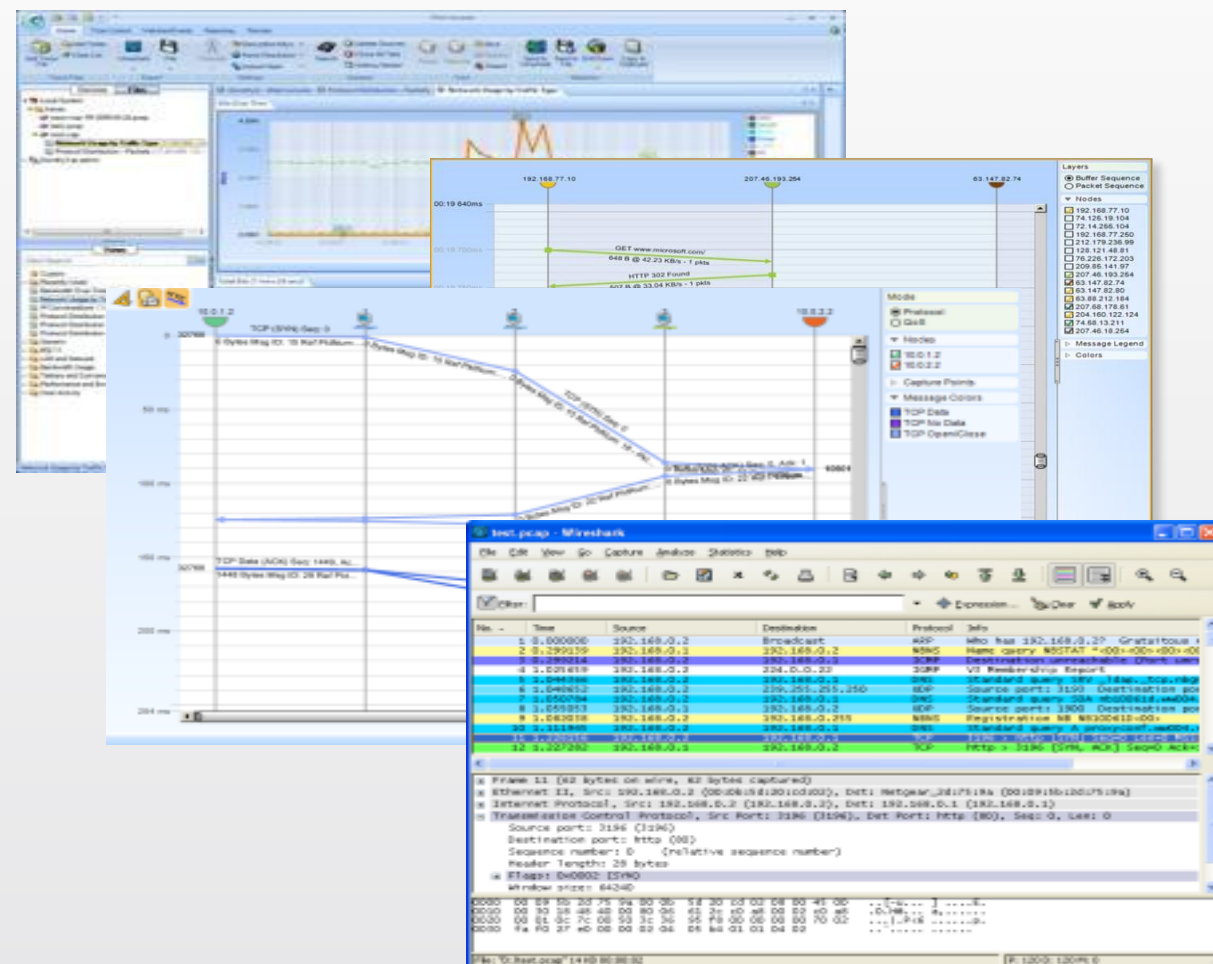


Packet Analyzer

SteelCentral Packet Analyzer

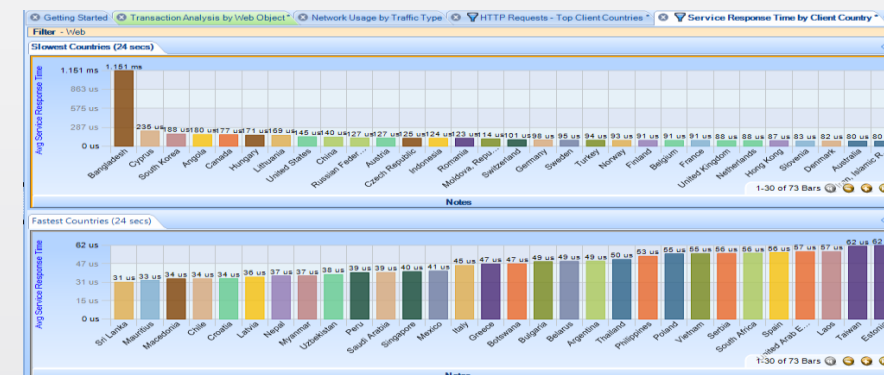
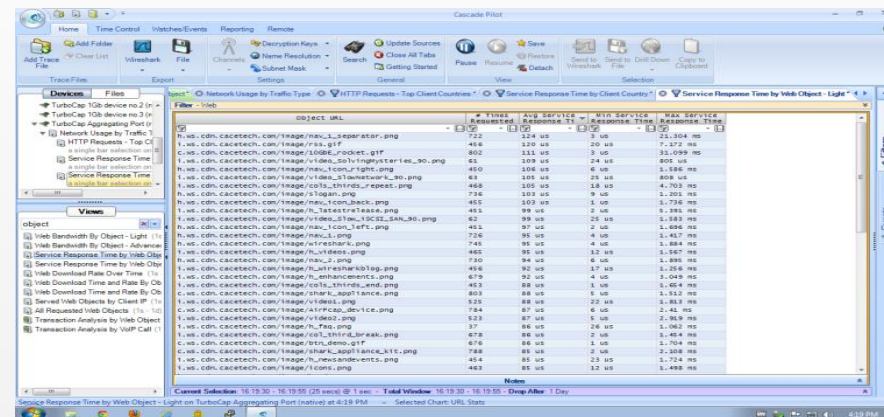
Powerful, visually rich packet analysis software for NetShark

- Intuitive, visual interface with broad selection of interactive Views
- Packet, transaction and multi-segment analysis in a single solution
- *Quickly* open and analyze multi-terabyte trace files
- Seamlessly integrates with Wireshark – world's most popular protocol analyzer
- Integrates with Transaction Analyzer for transaction analysis and “what if” predictions

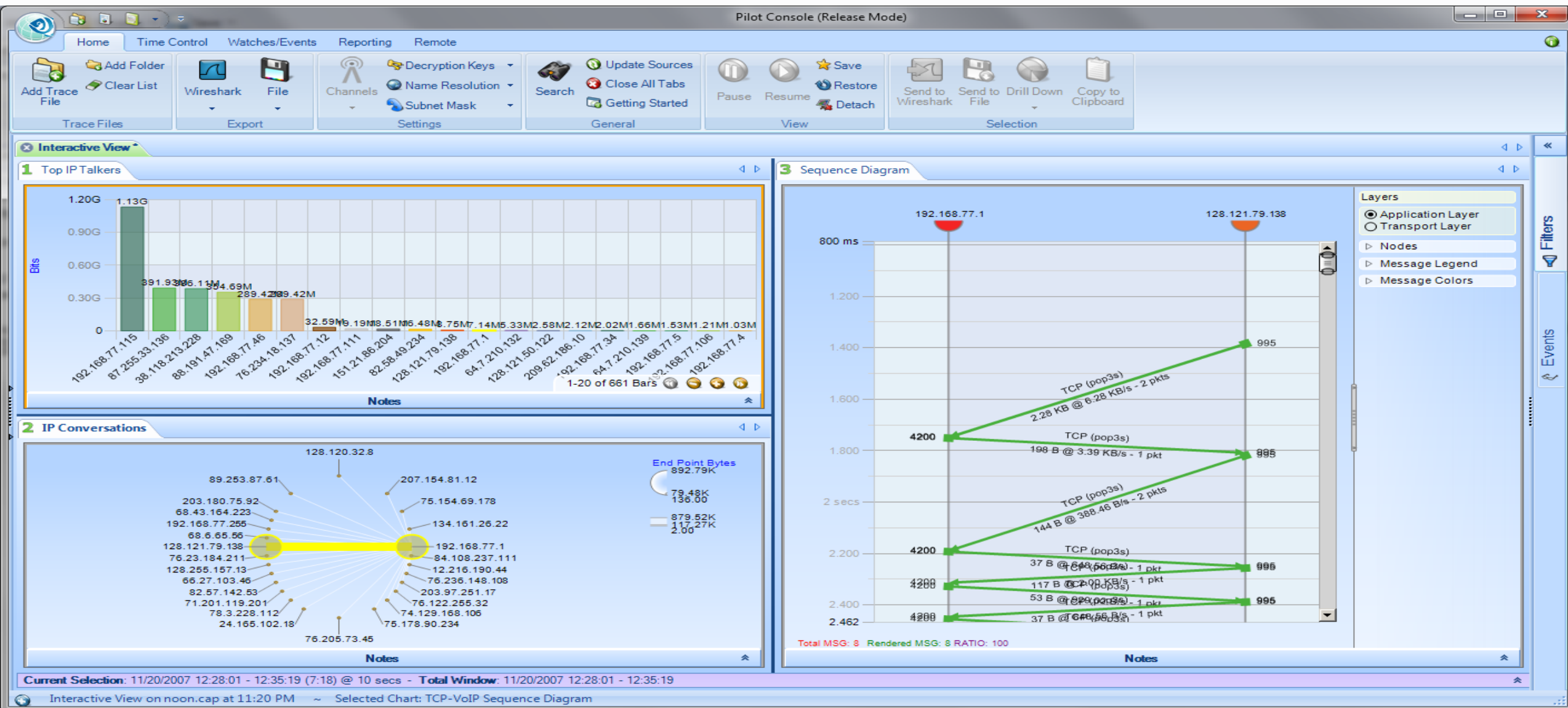


Broad Selection of Interactive Views

- LAN/WAN troubleshooting
 - MAC, VLAN, ARP, ICMP, DHCP, and DNS
- Bandwidth usage
 - MicroBursts, IP, TCP, Web, FIX and VoIP
- Talkers and conversations
 - IP, subnets, countries, TCP, Web, and VoIP, FIX
- Performance and errors
 - IP, TCP, Web, VoIP, FIX
- User activity
 - Web, VoIP, FIX
- 802.11 WLAN troubleshooting
 - Discovery, Bandwidth, Channel Usage, Retransmissions, Signal, Noise



Interactive Views of Trace Files



For More Information

- Content Pack
- ROI Calculator
- Case Studies
 - Veolia Water Technologies
 - Tiburon Associates
- Analyst Papers
 - ESG The 'Application Deluge and Visibility Imperative'



Thank You