

5View™ Applications

Assuring Application Delivery through Real-time Performance Management

With today's enterprises heavily dependent on access to their business-critical applications from anywhere and anytime, their focus is firmly on the quality of application delivery. Managed service providers (MSPs) and enterprise IT departments responsible for ensuring high performing applications need immediate and detailed information into how these applications are behaving as they traverse the IP network—from centrally located and virtualized data centers out to globally distributed sites and users.

While NetFlow monitoring provides one level of visibility into application traffic, a view into the measures that aid in understanding the end-user experience will provide operations staff with a deeper application performance management perspective. To gain this perspective, application monitoring solutions that look beyond the IP header into the payload to calculate quality of experience (QoE) metrics, such as application response time, should be deployed.

Why 5View Applications?

5View Applications, with its Deep Packet Inspection (DPI) capabilities, provides MSPs and IT organizations with the richly detailed application usage, availability and response time metrics needed to continuously track and analyze application quality.

With 5View Applications' extensive monitoring and reporting capabilities, operations personnel are able to:

- Quickly identify application performance degradation and availability issues and proactively address them before service levels are seriously impacted
- Assure consistent application performance across the entire data center and network infrastructure
- Easily discover which applications and users are impacting the network
- Determine a specific application or application type's impact on network performance, enabling the assessment of quality of service (QoS) policies and the proper allocation of bandwidth
- Utilize application traffic and usage data as input into capacity planning, the successful rollout of new applications and WAN optimization decisions
- Immediately detect rogue activity on the network, such as port scanning, denial of service attacks, unauthorized server activity and the detection of unknown IP addresses

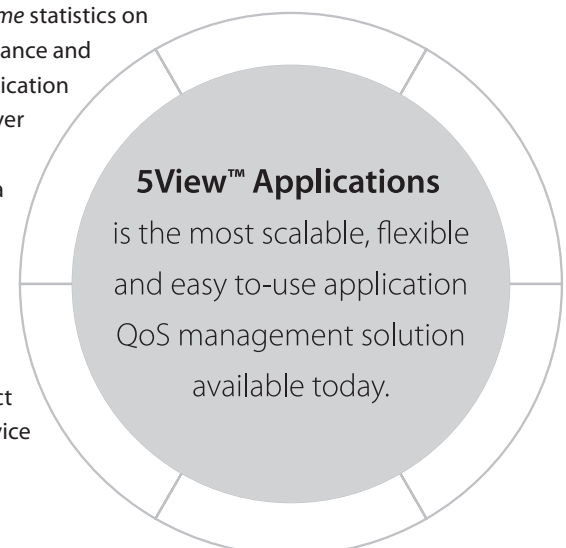
Real-Time Application Performance and Traffic Analysis Across the Data Center and Network

A passive and non-intrusive in-line monitoring appliance typically positioned in the data center, 5View Applications continuously and automatically discovers and classifies all applications and traffic types running throughout the data center and over the IP network. Collecting and examining the IP packet data, it calculates application performance and usage metrics across a distributed network. Designed to create

sophisticated IP data records (IPDRs) to better manage and manipulate the performance data, 5View Applications provides aggregated business centric visibility into application QoS and QoE, while allowing users to drill down to the details of the performance metrics.

Thanks to indicators such as server response time, client and server acknowledgement time, total transaction time, percentage of retransmissions, server inactivity, throughput and more, the appliance provides users with the pertinent factual information to answer questions around application performance and traffic, such as "is the application's performance in line with expected service level," "what's to blame if end users experience poor application response time—is it the application, client, server or network," "which areas of the organization are experiencing application performance or unavailability issues," and "how is the network being used (top applications and users)."

Unlike other solutions that focus on post-mortem transactional analysis, InfoVista's 5View solution approach is to provide ready-to-use, *real-time* statistics on application performance and usage from the application flows transmitted over the network and throughout the data center. With more timely access to this data, operations is able to detect potential and real issues sooner and act on them before service





and end-user experience is affected. For troubleshooting, faster mean-time-to-repair and proactive performance management, real-time visibility is always more valuable than historical, after-the-fact information.

Extending visibility deeper into the data center to include virtual server environments, 5View Applications can be deployed as a virtual appliance. This not only lowers costs by reducing the hardware footprint and allowing for existing resources (CPU, memory, energy) to be better utilized, it also enhances the management of virtual resources—providing visibility into the traffic between virtual machines on the same physical server.

Additionally, the 5View Applications appliance provides an optional but unified feature, 5View Teracap, allowing for massive packet capture and storage. This feature adds advanced forensic capabilities with powerful filtering for retrieval of specific conversations for analysis.

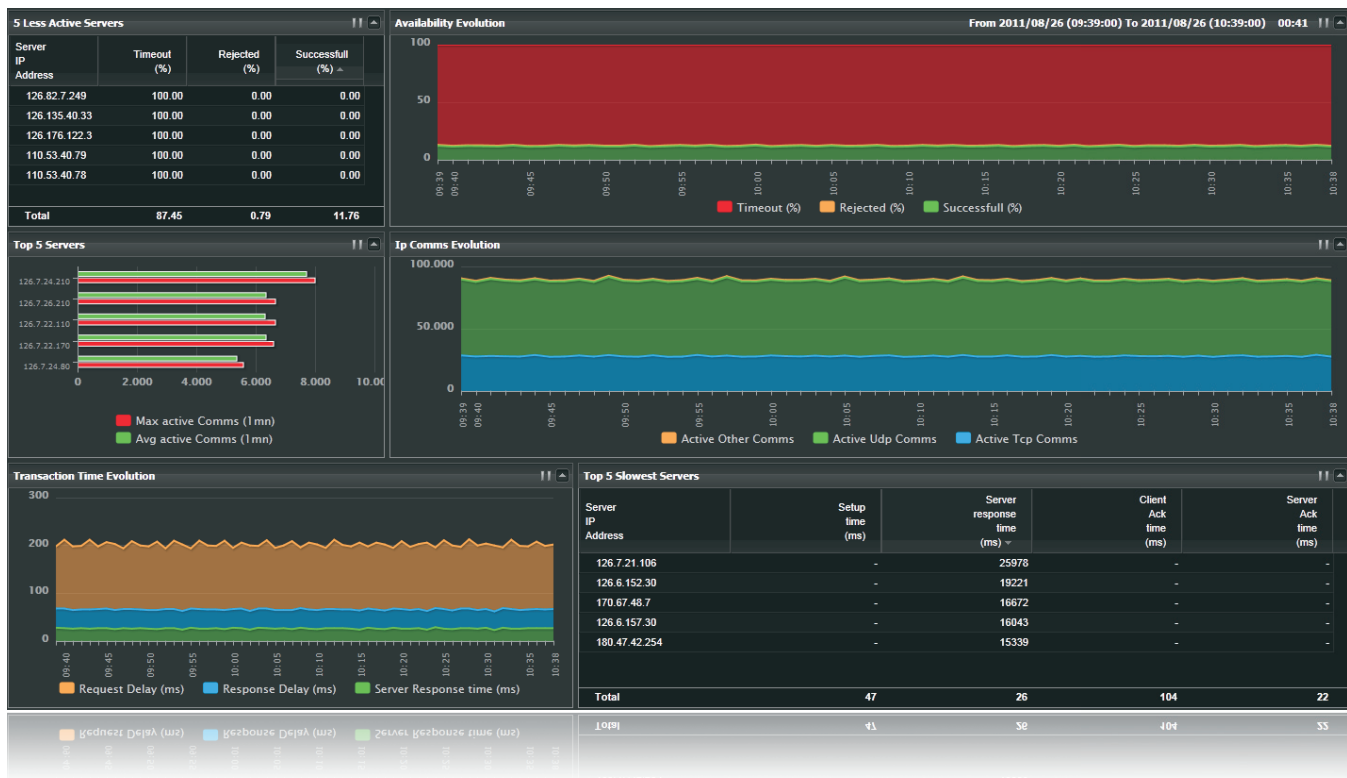


Figure 1. Real-Time Dashboard with Views of Application Performance Metrics

Flexible Interface and Reporting

With 5View Applications, it's easy to access the application QoS and QoE data through built-in reports, drill downs and matrix capabilities. Through the appliance's DPI capabilities and support for defining business-relevant hierarchical groupings—such as offices, regions and countries— organizations are able to track and display application performance and usage by almost any combination of parameters, including by geography, application, client, server or infrastructure. With 5View's rich data set, matrix views, alerts and multiple report formats, service providers and enterprises are prepared to tackle troubleshooting of application problems, application usage control and security issues investigation, alignment of network capacity to application rollout, and assurance of consistent application and service performance across the business.

Scalability

Whether monitoring a few offices or thousands of remote sites, 5View Applications is scalable from the smallest to largest network environments. A single appliance can process up to 500,000 simultaneous IP communications per minute. It is capable of monitoring 500 customer-defined applications and up to 10,000 remote sites. In a distributed environment of multiple appliances, the 5View solution scales to track application performance for hundreds of thousands of users.

With such robust performance, fewer 5View appliances can do the same job as more expensive, competitive solutions. The scalability of InfoVista's 5View appliances (and optional Service Data Manager and Mediation software) lie not just in their processing power but also in their ability to efficiently present the information to the end user. The business relevant hierarchical groupings, individual and group-aggregated statistics, single, multi-interface, enterprise-wide and multi-customer perspectives all make InfoVista's application performance and usage monitoring solutions a standout in terms of slicing and dicing the volumes of application QoS data created on a large enterprise or service provider network.

Ease of Use

A 5View Applications appliance can be up and running, collecting data and reporting in a day. Its intuitive Web 2.0 interface makes it very easy-to-use, whether by the seasoned application management expert or a novice. Deploying 5View Applications as a standalone appliance rarely requires additional training or professional services. Simply plug and play, and you are ready to go!

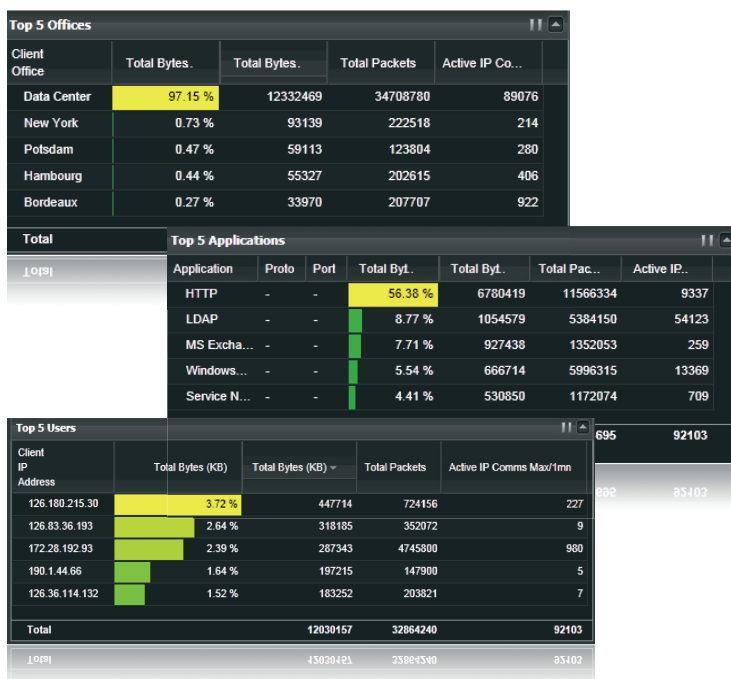


Figure 2. Views of Application Traffic Volumes: by Top Offices, by Top Applications, by Top Users

Centralized Management of 5View™ Applications Data

Integration with InfoVista Solutions

5View™ Service Data Manager and Application Response Manager Option

InfoVista's 5View Service Data Manager (SDM) provides the robust, carrier-class application performance management platform and out-of-the-box feature set needed by service providers and large enterprises in large scale and multi-customer deployments. Able to take the massive volumes of data collected by many 5View Applications appliances, SDM processes, aggregates and stores the multi-appliance, multi-customer data in a centralized repository. With the ability to properly segment and present the relevant data in both customer-facing and service provider views, the out-of-the-box KPIs, reports and views provided by SDM's Application Usage Manager option offer the most effective means to do application performance monitoring and troubleshooting, application-focused customer reporting, traffic engineering, capacity planning and QoS assurance—in a managed services environment.

In addition, SDM's fully multi-tenant architecture and its ability to handle a variety of service usage data types greatly simplifies the complexity and cost for service providers to launch and commercially manage the performance of a broad portfolio of services, including application-aware VPNs, unified communications and mobile data services.

5View™ Mediation

InfoVista's 5View Mediation complements SDM with advanced business intelligence capabilities. Data collected either directly from multiple 5View Applications appliances or via SDM's centralized multi-customer data platform can be brought into Mediation's single OLAP database. Supporting near real-time advanced data mining, specialized business-relevant reports and custom workspaces can be made available to different audiences, including executives, engineers and capacity planners. 5View Mediation's ability to process and aggregate statistics for more than two million IP addresses—with no loss of granularity—provides advanced level visibility into the performance of each application, as well as usage by each individual IP user or subnet.

Core Features & Architecture

- Rich application and traffic discovery and identification
- HTTPS traffic decoding mechanism
- Creation of sophisticated IPDRs to better manage and manipulate application usage data
- Connected to the network via switch SPAN ports or inline through Ethernet taps
- Non-intrusive appliance, adding no overhead to the network
- Ability to define business and technically relevant names for interfaces, applications and groups
- Support for virtual appliance deployment
- Integration with InfoVista's Service Data Manager platform and its Application Response Manager option for centralized management of multi-customer, multi-appliance flow data
- Integration with InfoVista's Mediation product for advanced business intelligence and data mining

Real-Time Monitoring Capabilities

- High performance data acquisition and monitoring (real-time one-minute collection with one-second granularity available for some reports), single appliance can monitor up to 500,000 IP communications (depending on model)
- DPI capability tracks IP sessions, users and applications, including peer-to-peer and RTP
- Real-time view of applications QoS, throughput and volume metrics, with rich application identification
- Server-side and client-side response time
- Ability to group applications in sets for real-time monitoring and easy filtering; grouping of applications by alarm parameters
- Graphical view of traffic capture with transaction bounce diagrams

General Reporting Capabilities

- Out-of-the box reporting, custom reporting and top-down analysis through drill downs
- By business-relevant hierarchical groupings---offices, regions, countries, business applications
- Multiple export formats including print, HTML and CSV
- Retain and access approximately three months of application performance data (as standalone appliance)

Alarming

- Real-time alerts on deviations encountered on business applications. Includes alarms on: application ToS, server response time, retransmission, acknowledgement delay, sync delay, and throughput, duration of inactivity
- Alarm integration with fault and network management systems

Product Specifications

Compatibility

- 5View Application Response Manager option of Service Data Manager version 3.2
- 5View Mediation version 4.1 and above

Models and Configurations

Appliance	5View Applications models			
Appliance Model Part Number	IVAP_O_1101	IVAP_O_1102	IVAP_O_2101	IVAP_O_2102
Form Factor	Compact Portable Chassis	1U x 17.1" x 15.5" rack (431mm x 393.7mm)	1U x 19" x 30" rack (482.6mm x 762mm)	1U x 19" x 30" rack (482.6mm x 762mm)
Management Interface	Copper: 1 x 10/100/1000 Mbps (RJ45 connector)			
Acquisition interface	Copper: 2 x 10/100/1000 Mbps (RJ45 connectors) Fiber: 2 x 1000 Mbps			Copper: 4 x 10/100/1000 Mbps (RJ45 connectors) Fiber: 4 x 1000 Mbps
Max. Simultaneous IP Communications	1,000 IP comms/min.	5,000 IP comms/min.	10,000 IP comms/min.	50,000 IP comms/min.
Maximum Total Throughput Monitored	2 Gbps (IN + OUT)	2 Gbps (IN + OUT)	2 Gbps (IN + OUT)	4 Gbps (IN + OUT)
Memory	1 GB	1 GB	3 GB	3 GB
Storage	160 GB SATA	250 GB SATA	3 x 146 GB SAS (15Ktr/min) RAID 5 – 2.5 inches	3 x 146 GB SAS (15Ktr/min) RAID 5 – 2.5 inches
Weight	4.2 Kg	8 Kg	18 Kg	26 Kg
Power supply	60 watts	250 watts	1 x 717 watts (hot swap)	2 x 870 watts (hot swap)
Voltage	AC 100-240V 1.5A 50-60Hz 9.0V 4.74 A Max (90W Max)	Autoranging (100V~240V)	90-264 VAC, autoranging, 47-63Hz	90-264 VAC, autoranging, 47-63Hz
Certifications	CE mark (EN55022 class A, EN55024, EN61000-3-2, EN61-3-3, EN60950) FCC Class A, VCCI Class A, UL-1950, CSA 950, EN60950			

Appliance	5View Applications models (continued)		10 Gigabit 5View Applications models	
Appliance Model Part Number	IVAP_O_3201	IVAP_O_3202	IVAP_O_4201	IVAP_O_4211
Form Factor	2U x 19" x 28" rack (482.6mm x 711.2mm)	2U x 19" x 28" rack (482.6mm x 711.2mm)	2U x 19" x 28" rack (482.6mm x 711.2mm)	2U x 19" x 28" rack (482.6mm x 711.2mm)
Management Interface	Copper: 1 x 10/100/1000 Mbps (RJ45 connector)		Copper: 1 x 10/100/1000 Mbps (RJ45 connector)	
Acquisition interface	Copper: 4 x 10/100/1000 Mbps (RJ45 connectors) Fiber: 4 x 1000 Mbps		2 x 10 Gbps Fiber LC multimode optical	
Max. Simultaneous IP Communications	100,000 IP comms/min.	500,000 IP comms/min.	500,000 IP comms/min.	500,000 IP comms/min.
Maximum Total Throughput Monitored	4 Gbps (IN + OUT)	4 Gbps (IN + OUT)	6 Gbps (IN + OUT)	20 Gbps (IN + OUT)
Memory	6 GB	12 GB	6 GB	12 GB
Storage	4 x 146 GB SAS (15Ktr/min) RAID 5 – 2.5 inches	8 x 146 GB SAS (15Ktr/min) RAID 5 – 2.5 inches	8 x 146 GB SAS (15Ktr/min) RAID 5 – 2.5 inches	8 x 146 GB SAS (15Ktr/min) RAID 5 – 2.5 inches
Weight	26 Kg	26 Kg	26 Kg	26 Kg
Power supply	2 x 870 watts (hot swap)	2 x 870 watts (hot swap)	2 x 870 watts (hot swap)	2 x 870 watts (hot swap)
Voltage	90-264 VAC, autoranging, 47-63Hz	90-264 VAC, autoranging, 47-63Hz	90-264 VAC, autoranging, 47-63Hz	90-264 VAC, autoranging, 47-63Hz
Certifications	CE mark (EN55022 class A, EN55024, EN61000-3-2, EN61-3-3, EN60950) FCC Class A, VCCI Class A, UL-1950, CSA 950, EN60950		CE mark (EN55022 class A, EN55024, EN61000-3-2, EN61-3-3, EN60950) FCC Class A, VCCI Class A, UL-1950, CSA 950, EN60950	

Models and Configurations (continued)

Appliance	Virtual 5View Applications models	
	IVAP_1_2101	IVAP_1_3201
Appliance Model Part Number		
Maximum Simultaneous IP Communications	10,000 IP comms/min.	100,000 IP comms/min.
Number of vCPUs	2	4
Memory	3 GB	6 GB
Management Port	1	1
Acquisition Port	2	4
Disk Space Requirement	50 GB	100 GB
VM Version	7	7

5View™ Applications, with its DPI capabilities, provides MSPs and IT with the richly detailed real-time application performance and usage information needed to continuously track and analyze application quality



Figure 3. Dashboard example



For more information, please visit www.infovista.com
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