

## Datavision Consulting Services: Arista Network Visibility Tools

Datavision, Inc. is a leading specialty information technology consulting and staffing firm providing a full range of professional services to address core technology areas which support and drive critical business processes.

Datavision’s network engineering and support services help our clients plan and execute Cloud-centric and OpenStack initiatives. Our consultants will work with you to assess the current environment, develop a roadmap and architecture to integrate the technology, and also help to realize the network infrastructure best suited to the business needs. Our services include the following general stages of engagement, with individual client needs driving the complete statement of work:

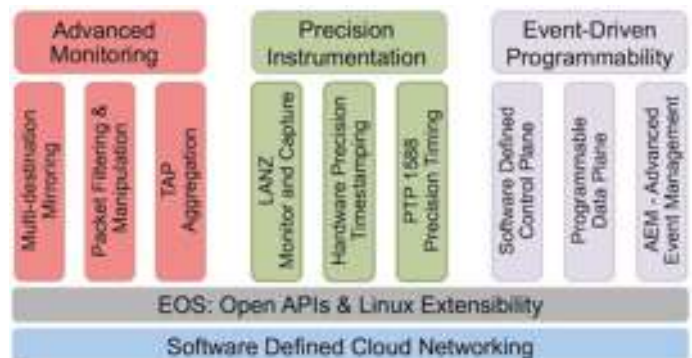
- Design & Planning
- Implementation: Integration & Migration
- Operational Support/Training
- Network Optimization

As part of our service offers, Datavision can provide expertise to help operate the network with you on a short- or long-term basis. We can also develop training for your personnel to thoroughly understand the technology being implemented in the network, and to help ensure a smooth transition from the prior network architecture to the new.

### Datavision Services supporting Arista’s Software Driven Cloud Networking

Arista’s Software Driven Cloud Networking (SDCN) combines the principles that have made cloud computing operationally and functionally effective. The use of automation, self service provisioning, and linear scaling of both performance and network economics coupled with SDN, delivers network virtualization, custom programmability, simplified architectures, and improved economics to the carrier and the enterprise environments.

These evolutions in software and networking hardware functionality creates a best-in-class foundation for maximizing the value of the network to both the enterprise and service provider data center: a new architecture for the most mission-critical location within the IT infrastructure that simplifies management and provisioning, speeds up service delivery, lowers costs and creates opportunities for competitive differentiation, while restoring a higher degree of control and visibility to network operations.



The most obvious benefits of migrating to an automated, SDN-centric approach are that corporations can greatly reduce the operational cost of the network, reduce the complexity of managing large data centers and networks, and can help to reduce network downtime.

Virtualization has largely transformed the data center with flexible and automated server provisioning. But networking and storage infrastructure have not kept pace. In fact, they often serve as the bottleneck. Software-defined data center (SDDC) strategies could be key to moving this infrastructure to a more reliable state. The concept behind SDDC is to bring every aspect of an IT environment to match the same ease of provisioning as virtual computing, resulting with all infrastructure delivered as a service and automated by software.

The question is, how can operators monitor and manage the “new” infrastructure in a more comprehensive and effective manner? Through the use of the Arista DANZ Framework, Datavision can help you control. Measure and monitor your data center network infrastructure and measure (and notify) its performance in real time.

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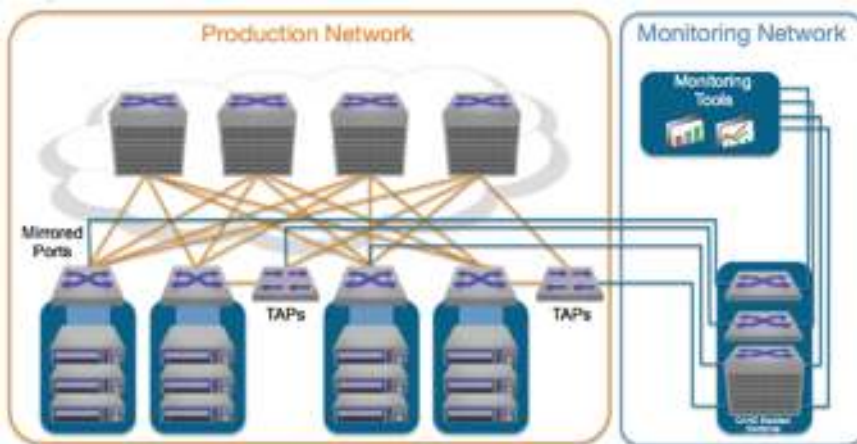
The suite of services offered by Datavision encompasses assessment, design, implementation and testing/turn up of Arista's Network Visibility and Performance framework; Arista DataANalyZer (DANZ), Arista Latency ANalyZer, (LANZ), and Advanced Event Management (AEM).

### Advanced Monitoring:

The DANZ toolset helps to solve one of the more challenging aspects of monitoring the network through taps – As an integrated feature set of Arista EOS, DANZ is currently available on their 7150 series switches.

DANZ provides a solution to monitoring and visibility challenges at 10/40Gbps and higher with unmatched price-performance and precision. The Arista DANZ software features give IT operations and planning departments the following capabilities:

- Aggregate, replicate and capture traffic for processing without affecting production
- Apply advanced filtering and precision time stamping at wire rate in hardware
- Monitor, capture and correlate congestion and microburst events in real time
- Deliver application layer feedback directly to applications and tools
- Integrate with any standard 3rd party API and Application/Network management tools
- Achieve all of these features in Arista's full featured switches without additional equipment



With Arista DANZ, organizations that have requirements to perform critical analytical and monitoring functions with increasingly higher data volumes and higher network bandwidths can maintain security, compliance and reporting for all traffic without the addition of proprietary out-of-band monitoring infrastructure or backhaul networks.

Troubleshooting applications and performance problems, performing traffic interception when required (such as for Lawful Intercept or compliance), and managing overall customer satisfaction and response times can be accomplished cost-effectively with limited new investment and using existing tools.

### Precision Instrumentation

#### Track Real Time Congestion and Latency with Arista LANZ

- Know the answer to the question: Is the network slow?
- Track sources of congestion in real-time
- Integrate network performance into applications and middleware

Arista Latency Analyzer or LANZ is a breakthrough technology from Arista that tracks sources of congestion and latency with real time reporting in microseconds. Historically if 'the network was slow' administrators would attach a probe/collector and hope the problem happened again. With LANZ you will know when congestion happened, track the sources of congestion, and be able to export real-time events to external applications like Solace Systems middleware. This enables the application layer to make intelligent traffic routing decisions with unprecedented visibility into the network layer.

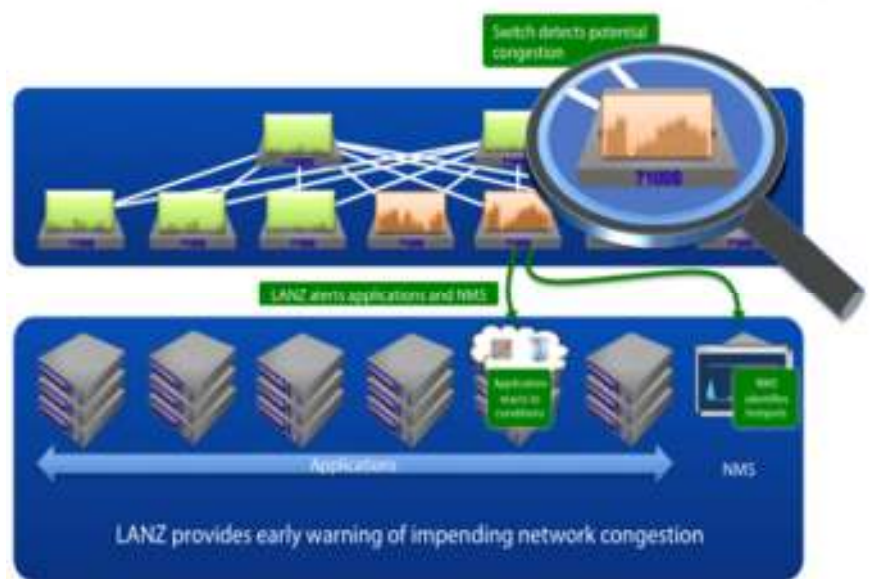
A key application of integrated LANZ is for the financial services market where trading plant performance is key. With LANZ the network operations teams and administrators will have more visibility than ever before into the network and know if 'microbursts' are really happening or not. With sub-millisecond reporting intervals, congestion can be detected and application-layer messages sent faster than some products can forward a packet.

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### LANZ (cont.)

LANZ is a proactive, event-driven solution that operates through providing real time notification of congestion hot spots and their effect on application performance and latency at nanosecond resolution – this is a completely different approach than traditional SNMP and RMON polling approaches that allows LANZ to be a much more accurate measurement tool of network latency.

LANZ functionality operates based on monitoring and exporting in real-time the queue length data based on a user configurable high/low threshold. When the thresholds are crossed, indicating congestion, the system generates a time stamped congestion event. This technique allows events as short as 100nS to be reported. Monitoring at the queue versus the port allows monitoring of specific traffic classes within the network.



### Event-Driven Programmability:

The third aspect of Arista's Analyzing Framework is Advanced Event Management, or AEM. AEM is a powerful and flexible set of tools to automate tasks, customize the behavior of the system and associated operation of the switching infrastructure.

Leveraging an open operating system, AEM allows operators to fully utilize the intelligence within EOS to respond to real-time events, automate routine tasks, and take local automated action based on changing network conditions. Simplifying the overall operations, AEM provides the tools to customize alerts and actions. It is composed of three major components: 1) Event Manager, 2) Event Monitor, 3) Linux tools.

These services singly or combined allow engineers, operators, and partners to take advantage of the functions inherent in EOS. Arista hardware can be customizable in ways that work intimately with each customer's unique operating environment. AEM allows user customization of the system, leveraging the internal features of EOS to monitor for specific events, and trigger specific actions based on these events. Now the network can programmatically react to events, providing clients with an event-driven service model.

The tenured, experienced and credentialed resources provided by DataVision Inc. provide unmatched service and support. We are committed to developing and maintaining long-term, quality relationships based on integrity, professionalism and competency.

**At Datavision, your success is our business.**