



# ZIGRON

Connected  
Application  
Experts

## CASE STUDY

# VNF Performance Measurement Reporting

## ABOUT ZIGRON

Zigron is a US based company with offices in Northern VA and Pittsburg PA. It also has facility along with a world class infrastructure in Islamabad Pakistan. Zigron specializes in Cloud and SaaS based solutions, Big Data Analytics, New Platform/Product Development, Rich User Experience, Application Modernization/Unification and AdvancedData Visualization in Telecom/M2M/Networks.

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## PROBLEM STATEMENT

The client wanted to leverage a **VNF** based solution in order to add value to their network infrastructure by optimizing the use of resources via on-demand capacity management. However, this involved a great deal of risk and uncertainty. With their current configuration, network functions were implemented as dedicated appliance or chassis-based devices which were essentially self-contained and had clear boundaries at the physical interface. But with the proposed shift to virtualized deployments, the resources were going to be drawn from a shared environment thereby decreasing performance.



## OUR SOLUTION

Our team of engineers was quick to come up with the idea of benchmarking the VNFs in order to conduct a cost-benefit analysis and consequently enable the top management to make a well informed strategic decision. We considered the following key factors as testing criteria: **Conquering Complexity:** Before we tested the **VNF**, it was important to determine the performance of the virtual environment itself. To do this, we conducted two experiments: Workload was input to the system via physical interfaces using a physical traffic generator. For this scenario, we used two separate modes: with **DPDK** turned off, and with DPDK turned on. The resources allocated to the virtual ports were isolated by pinning CPUs. After testing the environment, we loaded the VNF using simulated traffic. Traffic was both (fully stateful) SIP and HTTP. The experiments above were performed with DPDK turned off and turned on **Conquering Concurrency**. For this we used what the **“noisy neighbor” approach**, where we also evaluated the performance of the VNF with concurrent **VNFs**, by generated synthetic workloads to stress compute, memory and networking resources. In this case, the VNF under test was loaded using stateful traffic simulated by **Spirent Test Center** virtual ports.