



# Utilizing Telemetry

*For High Performance Networks*

WITH THE REVENUE EXTRACTION GATEWAY

Your organization has spent countless time and resources building what was planned to be a robust, high-performance and reliable infrastructure. Sales and Marketing have done their work to attract paying customers. The whole business now heavily depends on keeping your network users and subscribers happy. Your competitors are at the ready to identify any weakness, to pounce on and convince any user who even hints at thoughts of dissatisfaction with the service for which they are paying. To the paying customer, the root of any problem is not relevant... they just know that the service isn't working as they expected.

This scenario isn't new, and it shouldn't be viewed as a problem. It should be viewed as an opportunity to utilize your existing network infrastructure to gain insight and intelligence on end-to-end network performance in order to continually optimize that performance and ensure that the experience of customers never gets to a point where they are susceptible to competitive encroachment. In fact, network operators have the opportunity to have such insight into their network performance such that the network itself becomes irrelevant to the user - they never think about the network because the network just works.

This opportunity - providing a highly-tuned network experience - doesn't just apply to subscriber-based networks. Operators of any network - Hospitality, Gaming, Large Public Venues, Educational Institutions - can and should strive to achieve this level of performance and reliability driven network transparency. Mission-critical employees, systems and connected devices rely on the network to perform their key functions.

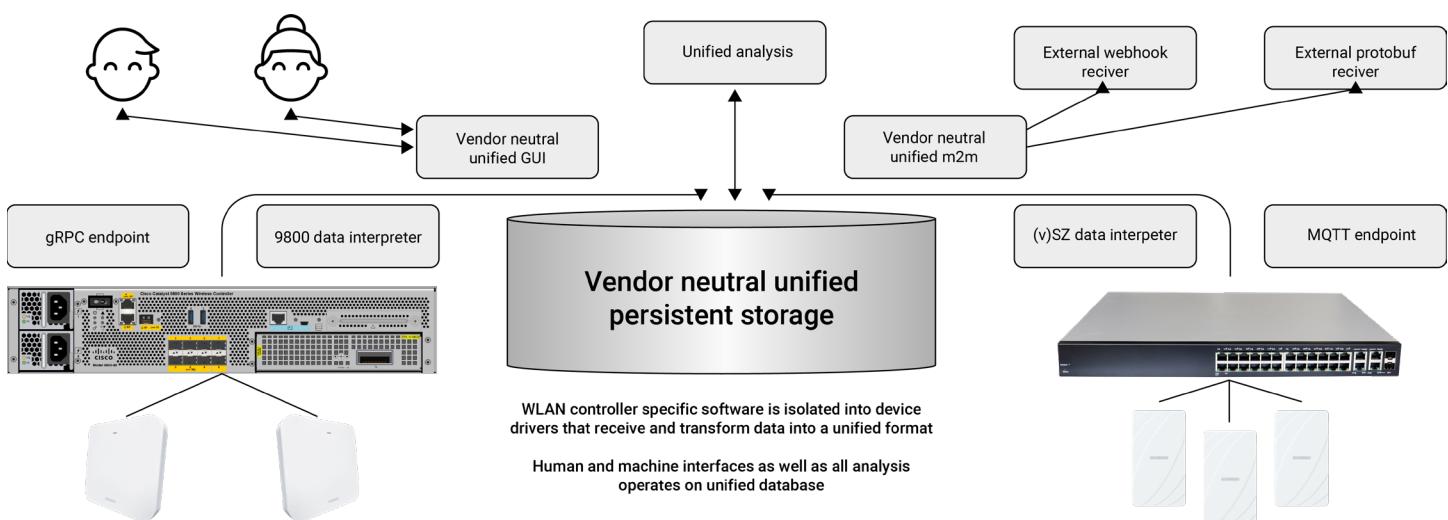
## PROACTIVELY ENSURE NETWORK PERFORMANCE AND RELIABILITY

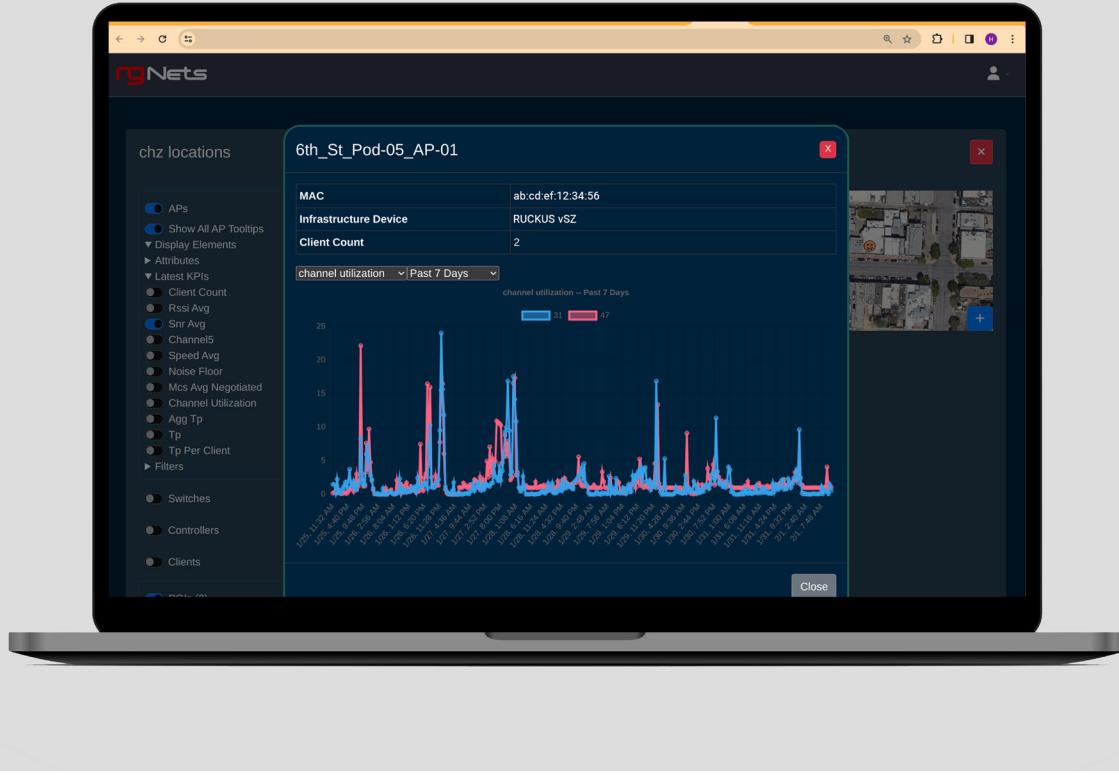
Today's network infrastructures can provide an immense amount of valuable telemetry information that, if utilized properly, can be used to track, analyze and troubleshoot the service to every connected user and device. In order to effectively ingest this data and make it actionable, it must be organized in a way that eliminates unnecessary noise, and presented in a way that allows the network operations team to quickly and easily identify and resolve potential performance issues before they become critical. Ideally, this performance data should be easily collected through the networking infrastructure that already exists, and graphically presented and simply managed through an interface with which the team is already familiar.

## ACTIONABLE PERFORMANCE DATA FROM YOUR EXISTING INFRASTRUCTURE

The rXg is the multi-services gateway that - in addition to myriad network and subscriber management functionality - can collect, organize, present, and act upon real-time network telemetry data.

Leveraging the modern high-throughput and availability of gRPC and MQTT/GPB protocols, operators can receive sub-minute updates about network events and performance. Using influxdb to store, and postgres with hypertable extensions to analyze this data, a detailed L1-L2 picture begins to emerge about each connected device's performance.



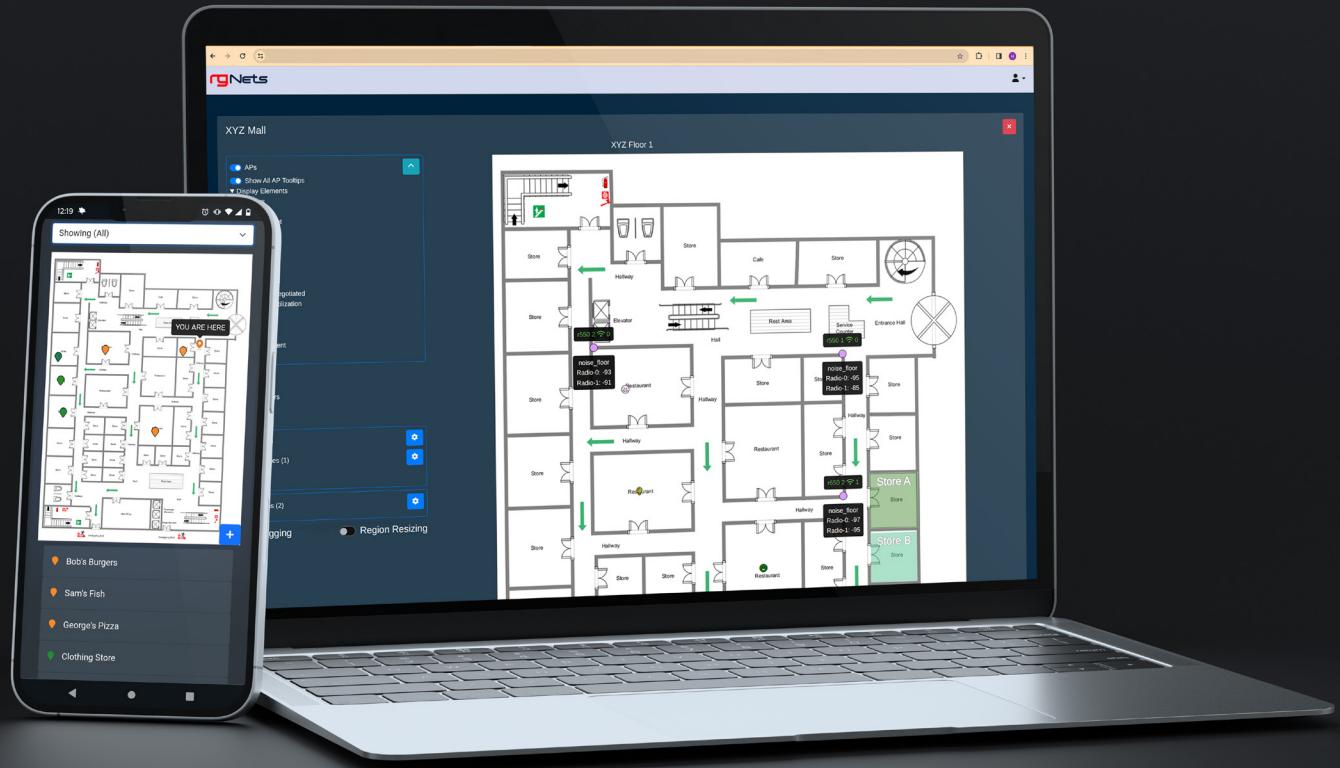


Further processing this telemetry data can help identify and determine the root cause of any poorly performing devices - both user and infrastructure - and aids in the rapid resolution of issues, and the reduction of potential future issues through data-based capacity planning and implementation.

Traditionally, the reliance on controller-provided network data was problematic, in that the controller did not retain historical data and only offered a moment-in-time view of network performance. The lack of historical data made it difficult - if not impossible - to have accurate performance and trend analyses.

With the rXg, operators can simply and easily configure the existing wireless controllers in their network to send granular performance data via MQTT/GPB to the rXg, which will aggregate, analyze and present the data in a simple to understand graphical format, making the full end-to-end network performance data immediately actionable. Utilizing this controller-based approach to telemetry data collection and ingestion, operators do not need to add any new hardware or software - additional cost and complexity that nobody needs. The controller provides deep insight into the performance of network switches, controllers, access points and connected devices.

Additionally, the rXg is unique in its ability to coordinate telemetry data with additional external specialized applications. Detailed guest information from integrated PMS systems, for example, could be combined with Location Based Services data and processed in conjunction with the controller performance data; the resulting whole-view analysis could provide critical and predictive user experience data, such as whether or not the performance exceeded an expected SLA for a specific guest in their guest room. Or whether or not the network - at any given time - is meeting/exceeding the advertised performance for multiple subscriber tiers at a mixed-use residential and commercial development. And with its easily configurable reporting capabilities, the rXg can easily provide these performance reports on a schedule that satisfies your KPI requirements.



## CONCLUSION

The best, most efficient, and highly effective way to address network, device and subscriber performance issues is to address them before anybody experiences the issue. As with any critical decisions - whether in design, equipment and software selection, personnel, etc. - having access to accurate, real-time information is essential. The rXg can provide network operators with a massive amount of real-time network performance data in an elegant and easy to understand interface, enabling network operations teams to effectively ensure the performance and reliability of every aspect of their networks. And the rXg can do all of this utilizing the infrastructure already in operation today, with no additional hardware or software, costs, or personnel resources.



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