

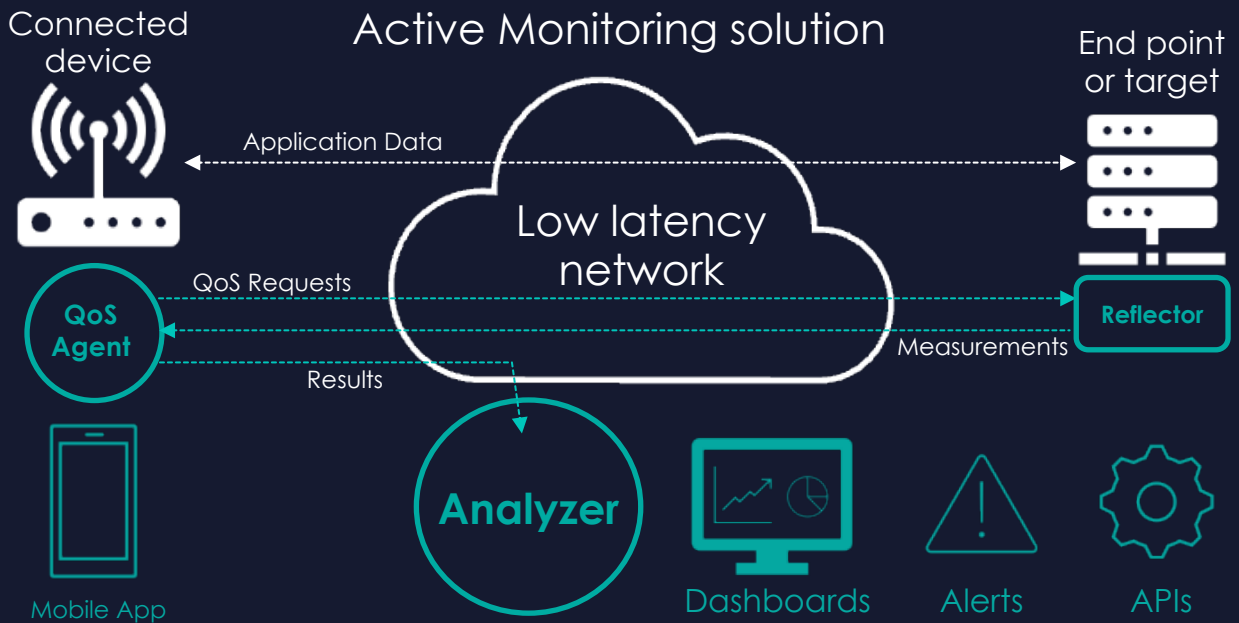
Monitor and Predict public/private 5G ultra low latency to support time-critical innovations

LATENCETECH

A real-time cloud-native monitoring and prediction solution for cellular networks with a focus on ultra-low latency connectivity. Using SAAS and AI, our solution helps mobile operators, telecom vendors and advanced industries to track, predict and secure the new benefits of low latency networks in support of time-sensitive innovations.



Our container-based solution is composed of three components that can be quickly and easily deployed to fit your specific monitoring needs. A **QoS Agent**, performing end-to-end active measurements using multiple network and IP protocols; A **Reflector**, acting as the target for the network link to be monitored and the **Analyzer™** a real-time data streaming platform running analytics, predictions and providing aggregated and granular observability of network quality and latency metrics using predefined dashboards complemented by threshold alerting and APIs.



Several **QoS Agents** can be deployed to actively monitor diverse network links aiming at the same Reflector. QoS agents can also be positioned on 5G CPE or network nodes such as a Mobile Edge Computing (MEC) node to get quality and latency results per segments. **Reflectors** are typically deployed onto or near the server supplying application data. The **Analyzer™** can be deployed on premises or on a public cloud. We also propose a **Mobile Application** on both Android and iOS that can act as a QoS Agent to perform network quality and latency “spot checks” and generate live latency heatmaps.



Real-time Monitoring

The **Analyzer™** includes a set of pre-defined real-time dashboards offering multiple indicators (KPIs) and detailed metrics on network quality and latency for any time periods (last minute, hour, day, week). Dashboards are built using Grafana™ Open-Source tool allowing easy customizations.

The compact dashboard displays the aggregated application and network latency KPIs, detected anomalies and presents latency volatility and network stability scores. Detailed latencies dashboard present latency results per network and IP protocols.

AI-based Advanced Analytics

The **Analyzer™** also comes with real-time advanced analytics to help you better understand and predict network latency variations.

Short term latency forecasts helps anticipate network issues and can generate an alarms if predicted latency is above a pre-set level. Real-time anomaly detection highlights abnormal network events can gat send alarms to the connected equipment or to an operations support system.

Technical Specifications

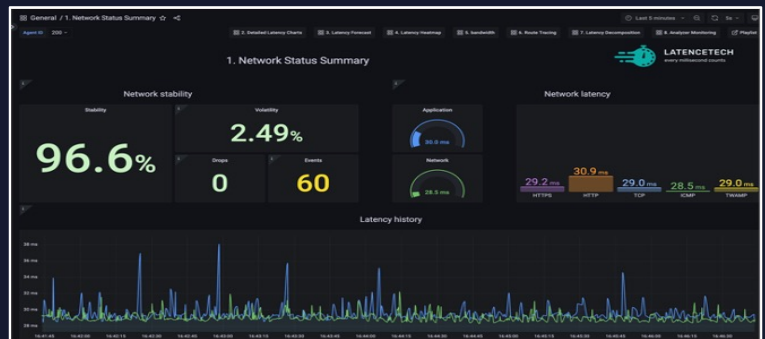
All solutions components are packaged as easily deployable Docker containers. A limited & configurable set of ports needs to be opened on the Reflector & Analyzer. Typical measurement sampling rate is every 2 seconds but configurable as low as 0.1s. Data consumption per QoS Agent (excluding bandwidth tests), using typical sampling, averages 50Mb per day when used continuously. Host requirements chart:

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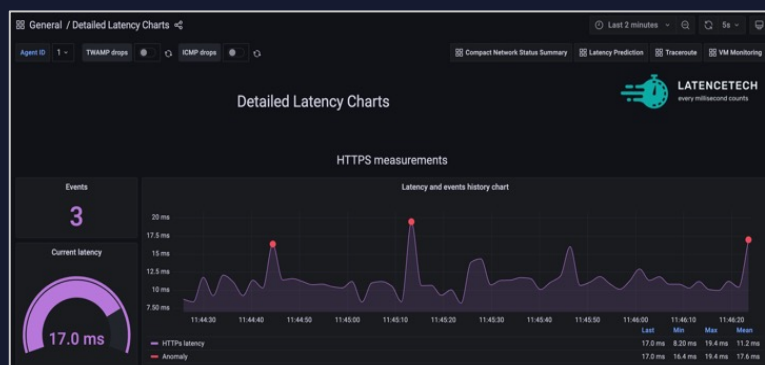
HOST	CPU	RAM	SPACE	IOPS
Reflector	1	Memory footprint : 10 Mb Recommended RAM : 20 Mb	Image size on disk : 27 Mb Recommended disk : 40 Mb	n/a
QoS-agent	1	Memory footprint : 20 Mb Recommended RAM : 40 Mb	Image size on disk : 40 Mb Recommended disk : 50 Mb	n/a
Analyzer	2	Memory footprint : 2.32 Gb Recommended RAM : 8 Gb + 4 Gb by agent	Image size on disk : 9.95 Gb Recommended disk : 20 Gb	1000+

US Patent pending # 63/477.451

Compact Dashboard



Compact Dashboard with latency KPIs



Detailed Latencies per protocol with anomaly detection



Forecasted Latencies for next 2 minutes



Low energy impact

