

Network Decisioning Solutions For 5G Services Deployment

Real-time visibility and intelligence to develop and deliver the next generation of high speed, low latency mobile traffic solutions

THE CHALLENGE WITH MONITORING AND ENGINEERING 5G NETWORK SERVICES

Fifth-generation, or 5G, wireless services are the latest generation of cellular technologies designed to increase the bandwidth and performance of mobile networks. With 5G deployments, transmitted data can travel at rates as high as 20 Gbps with latencies as low as 1 MS or less for applications that require real-time feedback. In addition to supporting more devices found in mobile, IoT and cloud environments (and delivering higher performance), 5G networks will support an explosion of new, high bandwidth services such as increased video telecommunications, autonomous vehicle signals, mission critical communications to name a few.

The innovation of 5G networks combined with Software Defined Networks (SDN), Software Defined WAN (SD-WAN) and Self-Organizing Networks (SON) has decoupled the operation and management of networks from the underlying hardware, i.e. the data plane from the control plane: allowing for test, dev-ops, security and network operations teams to test, deploy, monitor and “program” network services with a higher degree of control and visibility. MantisNet engineering teams have developed a solution that can efficiently provide visibility, intelligence and engineering of 5G network data to help telecommunications companies providing 5G infrastructure.

THE MANTISNET RECONFIGURABLE FRAME PROCESS - NEXT GENERATION SOLUTION

The Reconfigurable Frame Processor, Next Generation (RFP-NG) is a network intelligence and visibility solution built for complex network traffic and speeds from 10G to 100G and beyond. It consists of (P4) software applications running on a programmable software defined networking (SDN) platform.

Advanced Engineering for real-time 5G network decisioning

With MantisNet, advanced finite State Machine (xFSM) constructs for stateful packet processing is now possible. Delivering behavioral packet processing, high resolution flow masking and forwarding, deep packet filtering/matching along with dynamic parsing and de-parsing/de-encapsulation, with advanced instrumentation and telemetry.

It provides software-controlled connectivity, instrumentation, monitoring and visibility across the most complex 3G, 4G, and 5G networks deployments- without the need to replace existing infrastructure or deploy separate management or monitoring equipment. The addition of a programmable data plane, network telemetry capabilities, advanced instrumentation and embedded match-action processing provides the ability to generate complex event counters, and time-series data as well as providing a real-time control channel that allows the system to insert, delete, and modify entries providing hooks to perform run-time tasks, such real-time analytics and traffic shaping for 5G services at 10/25/40/50/100G network speeds.

CHALLENGE

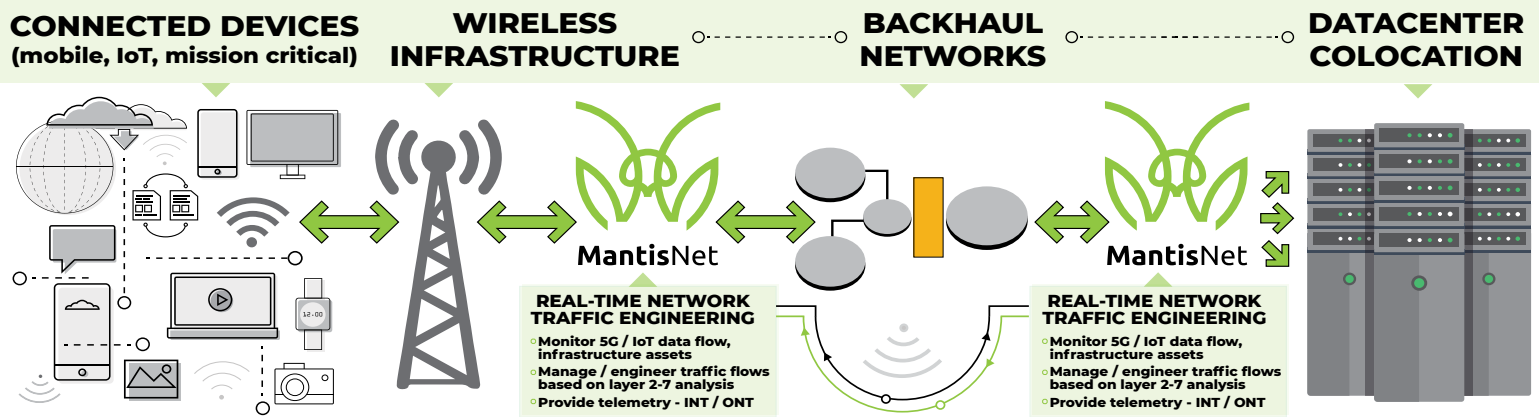
- 5G wireless services deployment has arrived and provides increases in bandwidth and performance for mobile networks- promising higher data speeds and lower latency.
- Ingesting, routing and processing this data using legacy network technology will inundate and congest service delivery once at the data center.
- Managing multiple protocols and network compatibility to process them at higher speeds will be the challenge.

SOLUTION

MantisNet’s software defined network (SDN) network intelligence and visibility solutions can manage and engineer network traffic flows as well as provide INT and ONT network telemetry, at speeds up to 100Gbps to help alleviate network choke points. MantisNet SDN solutions will help ease the burden of complex network services deployments more flexibly and efficiently than is possible with legacy technology.

BENEFITS

- Full line rate Ingest and filtering at layer 2-7 data at speeds up to 100Gbps
- Provide the ability to programmatically monitor and deliver real-time, standardized network telemetry.
- Generate high-resolution quantitative details, flow records and statistics
- Support automation, orchestration and service level assurance through a robust API framework
- Investment protection: Reduced OpEx and CapEx for development, test, operations and maintenance.



Telecommunications carriers and network services providers are hard pressed to deploy the next generation of 5G networks and new services offerings. Networks are the core of today's communications infrastructure - getting accurate visibility and real-time control of traffic is the biggest challenge confronting network professionals.

Parsing and decoding complex protocol overlays and encapsulations are non-trivial and requires a forklift upgrade when transitioning to next-generation 5G services. By providing programmable access to all control plane traffic and advanced instrumentation, telemetry services via in-band (INT) and out-of-band (ONT) channels - real-time visibility and control is now achievable. MantisNet's SDN solutions that provide real-time remediation of network issues to ensure optimized service delivery are aligned to efficiently support the development and deployment of the next generation of 5G services networks.

The application of data science tools and techniques is now within the realm of possibility; with the ability to instrument the network to support new workloads and manage them via both existing tools and analytic workflows combines the best of today's tools and tomorrows capabilities.

LAYER 2 - 7 DATA INGESTION AND FILTERING

MantisNet RFP-NG can act as an ingestion and filtering point for incoming 3G, 4G and 5G traffic, as well as to process and route traffic to appropriate network or application infrastructure protocol.

DYNAMIC PARSING AND DE/RE-ENCAPSULATION

The RFP-NG is capable of engineering and filtering network traffic after dynamic parsing and de-parsing/de-encapsulation of complex headers: MPLS, GRE, GTP, VN-TAG, Q-in-Q, RSPAN, VXLAN, GENEVE

OPEN MANAGEMENT ARCHITECTURE

Supports YANG model driven network telemetry (INT & ONT). It is designed to allow the collection and reporting of network state, without requiring intervention of the control plane.

INVESTMENT PROTECTION

Reduce CapEx and OpEx- MantisNet solutions can ingest, filter and route 3G, 4G, and 5G traffic across new and legacy infrastructure.

NEXT STEPS

Please visit our [website](#) to learn more about the [Reconfigurable Frame Processor - Next Generation](#) including a technical data sheet.



ABOUT MANTISNET

MantisNet develops Software Defined Network (SDN) and Network Function Virtualization (NFV) network intelligence solutions that provide businesses and governments real-time network monitoring solutions, for 100G speeds and beyond. MantisNet's solutions better enable network teams to monitor, manage and engineer the increase in network traffic flows they're experiencing compared to the preceding generation of packet brokers, firewalls, load balancers and event management solutions.

MantisNet combines end-to-end visibility, wire-speed network monitoring and protocol analysis (from L2 to L7) with the ability to perform real-time traffic engineering and remediation against operational issues, security threats, fraud, and malicious activities, either manually or autonomously. Our solutions are deployed at leading telecom, service providers, NEM labs and government sites. We work to make network intelligence actionable for a broad range of DevOps, network and application performance testing, streaming analytics, and cyber security applications.

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