CLOUDMON®

CLOUDMON NETWORK ASSURANCE SERVICE

Ensuring Reliable Remote Robotic Surgery

Cloudmon Network Assurance: for Life-Critical Remote Surgeries

Scenario

A leading Abu Dhabi clinic enables US-based surgeons to perform remote robotic surgeries for patients in Abu Dhabi via high-speed networks. These procedures require ultra-low latency, uninterrupted connectivity, and extremely high reliability. Even a millisecond of delay or packet loss can compromise surgical precision, putting patient lives at risk and creating potential regulatory and reputational exposure for the hospital.

Problem Statement

Remote robotic surgeries connecting Abu Dhabi clinics with US-based surgeons demand ultra-low latency, uninterrupted connectivity, and precise control. Traditional IT monitoring tools fall short in this high-stakes environment,

- **Blind Spots in Network Monitoring**: Servers and application nodes may appear “healthy,” yet network-level issues, packet loss, jitter, or latency, remain undetected, directly impacting surgical precision.

- **Lack of End-to-End Visibility**: Critical network paths across local hospital LANs, ISPs, and international cloud infrastructure are not continuously monitored, leaving gaps that can compromise performance.

- **High Operational Risk**: Even a millisecond of delay or disruption can halt surgery, delay interventions, or trigger operational shutdowns, threatening patient safety and exposing the hospital to regulatory and reputational risk.

Cloudmon Network Assurance in Action

How It Works

- **End-to-End Network Monitoring**

Cloudmon monitors the full network path from the Abu Dhabi clinic to US-based surgeons, including local LANs, ISP links, and cloud endpoints, ensuring complete visibility.

- **Synthetic Robotic Surgery Simulations**

Before live surgeries, Cloudmon runs simulated robotic sessions replicating real-time video, control signals, and diagnostic data, detecting latency, jitter, or packet loss that could compromise precision.

- **Real-Time Detection & Alerts**

Any deviation from safe thresholds, latency spikes, packet loss, or jitter is immediately detected, with intelligent alerts sent to IT teams and surgical operators.

- **Root Cause Analysis & Correlation**

Cloudmon pinpoints whether network issues originate from local infrastructure, ISP routing, or cloud provider performance, eliminating guesswork during critical procedures.

- **Evidence-backed reports**

Cloudmon provides IT teams and ISPs with the extensive reports needed for fast, effective remediation, reducing downtime.

- **Audit & Compliance Logs**

All detected events, alerts, and remediation actions are logged for regulatory compliance, providing audit-ready documentation for UAE Health Authority and international standards.

Cloudmon Network Assurance- Business Impact

Solution Benefits

- **End-to-End Network Visibility** – Provides comprehensive insight across local networks, ISPs, and international cloud infrastructure, ensuring no blind spots.
- **Preemptive Risk Reduction –** Synthetic surgical session simulations detect potential disruptions in video streams before live procedures, enabling proactive action.
- **Efficient Real-Time Monitoring** – Monitors network performance with minimal intervention, avoiding congestion while ensuring the surgeon's controls and video feed remain precise and reliable.
- **Rapid Root Cause Identification** – Quickly determines whether network issues originate from hospital LANs, ISP links, or cloud paths, allowing faster remediation without guesswork.
- **Actionable, Evidence-Backed Reporting** – Generates detailed reports for IT teams and service providers, enabling rapid corrective actions that minimize clinical impact.
- **Operational Confidence & Patient Safety** – Ensures uninterrupted, precise robotic surgeries, protecting patient lives and maintaining regulatory compliance while supporting hospital operational excellence.

Cloudmon Network Assurance-ROI

ROI of Implementing Network Assurance

- **Patient Safety & Clinical Confidence** – Surgeons operate with precision, uninterrupted, ensuring patient lives are protected.
- **Ensuring Accountability Across the Network** - By measuring hop-by-hop latency, we can accurately identify the GMPLS service provider responsible for any delays, establishing accountability in a chain where responsibility is often unclear.
- **Operational Reliability** – IT teams detect and resolve network issues proactively, reducing downtime from hours to minutes.
- **Regulatory Compliance** – Maintains adherence to UAE and international digital health standards for remote surgery.
- **Reputation & Trust** – Guarantees a dependable platform, reinforcing patient and clinician confidence in UAE's advanced digital health ecosystem.
- **Financial Protection** – Minimizes risk of canceled procedures, legal liability, and revenue loss from operational failures.

Outcome:
With Cloudmon Network Assurance, remote robotic surgery becomes a safe, predictable, and clinically reliable service. Hospitals gain real-time visibility, proactive monitoring, and actionable intelligence, turning a high-risk, latency-sensitive procedure into a scalable, trusted, and revenue-generating digital health capability.