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Data Sheet

Amdocs Backhaul Network Management for optimization & assurance

The past decade has seen service providers experiencing exponential growth in mobile packet data traffic – especially since the introduction of LTE and LTE-Advanced. Even as they adopt new technologies such as 5G and scale to answer the ever-increasing demand for network capacity and throughput, they cannot afford to allow the mobile backhaul network to fall behind. These issues are compounded by the introduction of newer technologies, which require multiple classes of services to properly address customer needs. Meanwhile, the challenge of ensuring the necessary quality of service (QoS) definitions has created the need for backhaul networks to prioritize SLAs and ensure they are always met.

In line with the strong correlation between radio access network (RAN) and mobile backhaul (MBH) performance, Amdocs is continually developing Amdocs Backhaul Network Management. This enables mobile operators to quickly identify the root cause of issues across the RAN and MBH domains, prioritize MBH optimization tasks that have the greatest impact on subscribers' quality of experience, and cross the silos between the RAN and MBH.

Amdocs Backhaul Network Management identifies the RAN KPIs most affected by MBH performance degradation by analyzing the correlation between the MBH KPIs available from the active probe (packet loss, delay & jitter) with key RAN KPIs of the control plane and user plane. Each KPI is then analyzed for impact of MBH packet loss, delay and jitter on the RAN performance. It also utilizes data from the transport and microwave network management system to identify network topology and link utilization.

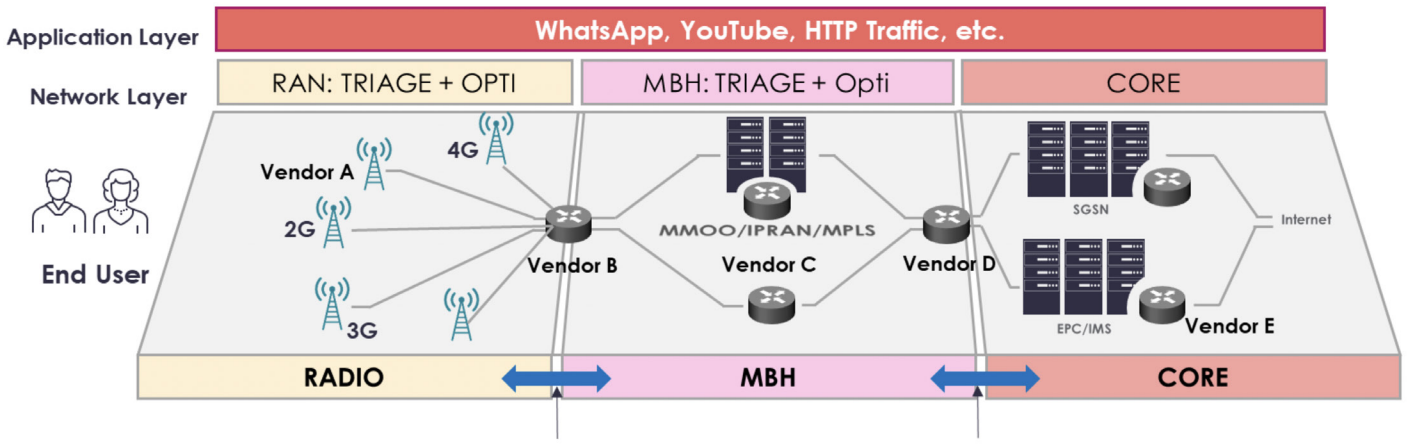


Fig 1. Amdocs Backhaul Network Management

The above approach helps prioritize MBH degradations that have the greatest impact on subscribers' quality of experience, across the silos from RAN to MBH.

Amdocs Backhaul Network Management enables optimization of the existing infrastructure to delay CAPEX spend, while still significantly improving the user experience. It combines RAN and transport expertise with Amdocs' Network Optimization Suite to provide full use case coverage on all layers to achieve data consistency and workflow optimization. Meanwhile, it applies predictive network assurance and artificial intelligence to future-proof the network.

Amdocs Backhaul Network Management features

- E2E **IP Network Performance** of SP architectures running IPv4, IPv6 SRv6 technology (simple to complex – legacy to latest) and related services (L2VPN, MPLS VPN, TE & QoS)
- OEM independent Amdocs Backhaul Network Management utilizing **OPENCONFIG**-based network performance models in terms of NETCONF/YANG & RESTCONF and associated KPIs from MNO network management systems
- Continuous **network monitoring** to understand end-to-end MBH network behavior (access to IP/MPLS core)
- Full support for **gNMI** (gRPC Network Management Interface)-based data controllers, including standards-based OpenConfig telemetry
- **MBH triage dashboards** provide visibility of MBH performance measurement databases
- **Correlation** of MBH performance reports with RAN performance database enables mapping of key measurements of e/g NodeB and its dependent MBH network elements in access layer, aggregation layer and core MPLS layers
- Creation of **site scores** enables prioritization of sites that negatively impact QoS
- **Triage** feature leverages a ranking mechanism to identify degraded network elements, and then classify and raise issues based on characteristics and impact. It then prioritizes the most severe issues for resolution

Main benefits

- RAN-MBH view enables quantifiable impact of MBH on RAN using traditional and user experience KPIs
- One-minute MBH KPI resolution
- End-to-end quality-of-service check
- Performance monitoring of fiber optics and microwave links (P2P, P2MP)
- Network topology views with link-level KPIs
- Automatic drilldown of MBH issues with visualization dashboard
- Monitoring and assurance of MBH health KPIs
- Support and analysis of performance metrics for carrier-grade backhaul microwave links in upcoming E & V bands for 5G networks
- Maximizes active probe data

Case study: delivering seamless network performance from RAN to MBH

A North American mobile network operator preparing for the launch of 5G, experienced an immediate need to improve fronthaul and backhaul visibility to improve their customers' quality of experience. Such visibility was not previously possible, as data from the backhaul, active probes and RAN was neither correlated nor viewable in a single location. Moreover, the existing MBH performance reports were not as comprehensive as the RAN measurement reports since key KPIs (traffic and cell availability) were insufficient, while critical ring information was maintained manually in spreadsheets.

The operator selected Amdocs Backhaul Network Management for its vendor-agnostic monitoring capabilities. Amdocs Backhaul Network Management enabled them to track the transport network's performance, gain a single view of the correlated transport and RAN KPIs, automate retrieval of ring information from the backhaul, as well as categorize and prioritize the impact of transport network issues in accordance with quality of service.

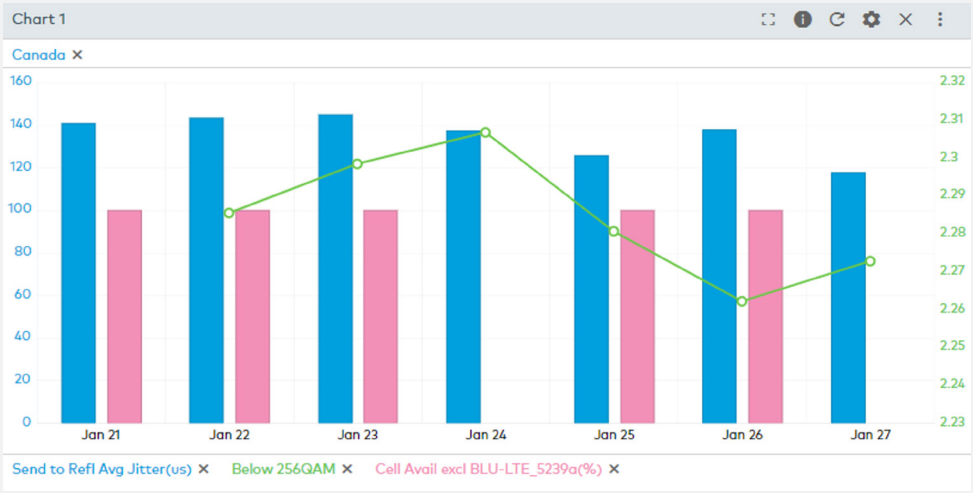
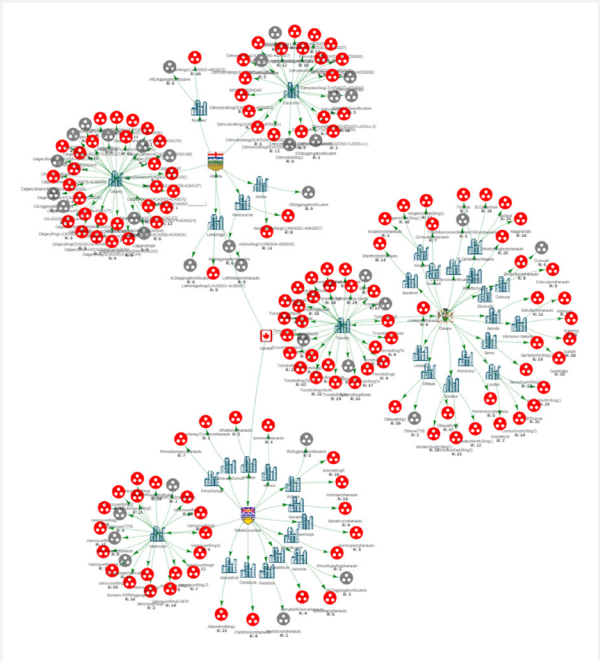


Fig 2. Mixed RAN and backhaul KPI Single Correlated View



Furthermore, it provided a comprehensive way to display network topology with near-real-time per minute monitoring, combined with insightful correlated data, enabling them to diagnose and resolve cross-domain network issues, and ultimately leading to vast improvements in service delivery.

Fig 3. Sample of Amdocs Backhaul Network Management Topology

Why Amdocs?

Amdocs Backhaul Network Management was recently awarded an MBH patent for the system, method and computer program for utilizing the radio access network (RAN) information and mobile backhaul (MBH) network information to assess network site performance.

Our track record supporting projects throughout all phases of network rollout and acceptance is proven. It includes, but is not limited to RAN, transport and core design, provisioning and troubleshooting services, pre- and post-launch optimization and triage for multivendor, multi-technology heterogeneous networks.

As a preferred partner for tier-1 and tier-2 service providers across the globe, our vast network of rollout and acceptance services provides scalable, fast and reliable network rollouts – enabled by our software-led approach and bolstered by our automation and resource flexibility to support process acceleration.

For more information, contact Network Marketing.

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