

Performance Intelligence Center

Customer Experience Management

Benefits at a glance

- Trace calls and services across an operator's entire network
- Monitor subscriber calling activity
- Monitor performance and service-level agreement compliance
- Isolate problem sources and responsibility



Business Requirement

With the introduction of new technologies such as Internet Protocol (IP) infrastructure enhancements, including SIGTRAN (SS7 over IP), Voice over IP (VoIP), general packet radio service (GPRS), universal mobile telecommunications system (UMTS), and session initiation protocol (SIP), both network monitoring and troubleshooting become increasingly complex. Traditional performance management systems are being pushed to the limits, having to support services, higher traffic volumes, increased inter-network transit traffic and many new protocols.

As operators launch new services, integrated end-to-end monitoring across the evolving network delivers cost savings by ensuring high customer satisfaction and detecting issues quickly so that the new services can continue to generate revenue. As networks evolve to SIP-based, next-gen networks, this becomes even more critical. Operators need to see the "big picture" of the entire network in order to manage critical factors that impact profitability, such as quality of service (QoS) at interconnects, non-billable traffic, trunk utilization, serving GPRS support node/gateway GPRS support node (SGSN/GGSN) throughput and utilization and traffic volumes across GPRS and UMTS interfaces.

Challenge

Service providers are required to simultaneously monitor legacy and next-generation networks to determine the status of the entire network in real time and ensure network integrity and health. Their performance management systems must handle all protocols across various network types, including wireline, wireless, and emerging technologies. For troubleshooting, their systems must support end-to-end, multi-protocol call segments as well as call tracing for network services associated with calls.

Performance management requirements are further complicated by the addition of services such as number portability, calling name (CNAME), SMS and email delivered by third-party providers. Service providers are required to monitor QoS levels of third-party services and troubleshoot the network when service levels decline. Because of the involvement of various network elements and partnerships, effectively isolating an issue can be very challenging.

Solution

Tekelec provides operators with the proven tools for cross-domain network monitoring. Tekelec's Performance Intelligence Center (PIC) provides the tools operators need to manage all aspects of the network, while providing business-critical information to other departments within the organization.

Unlike typical network monitoring systems and performance management tools, Tekelec's Performance Management solution provides powerful reporting flexibility, allowing the user to decide what data and reports are needed. Comprehensive QoS reports and interconnect traffic analysis help operators maximize call completion rates, increase revenue and meet interconnect commitments. Operators are able to determine why

SOLUTION BRIEF

subscribers are unable to access e-mail, troubleshoot download failures from ringtone servers, and even identify issues with traditional intelligent network (IN) services such as CNAM and number portability.

As operators evolve from traditional time division multiplexing (TDM)-based networks to an IP-based network, Tekelec's Performance Management solution enables complete visibility to network traffic, while providing the tools that ensure lucrative services will continue to be delivered without interruption. This level of detail gives operators unparalleled insight into what their customers are actually doing when they access the network.

As operators begin to offer next-gen services, the ability to analyze uptake patterns and usage rates for new services shortly after launch is important. Service-usage information can be correlated by service, subscriber, geography, etc., providing a true demographic report on services used, roaming activity, content downloads and calling patterns by region. When armed with this knowledge, service providers can more effectively tailor programs with competitive rate plans, services and bundled offerings that will attract and retain customers.

Benefits

The Tekelec Performance Management solution provides operators with a number of advantages, enabling them to:

- Use common applications for QoS, alarming and troubleshooting regardless of network type.
- Trace calls, services and networks as well as determine the network status of the signaling core in real time.
- Track subscriber calling activity, network services or wireless data services such as downloads, email and SMS for QoS and troubleshooting.
- Monitor performance and service-level agreement (SLA) compliance for inter-connect operators, third-party service providers, and network equipment.
- Troubleshoot to isolate problem sources and responsibility as well as resolve issues.
- Proactively manage customer care with operators being able to detect and resolve the leading problems cited in customer dissatisfaction surveys including wrong dialing code, wrong virtual private network (VPN) usage and call forwarding loops.
- Supervise 2G, 3G, and future 4G wireless networks as wireless providers can track wireless voice calls, e-mail transactions, data downloads, and much more.
- Detect potentially fraudulent bypass traffic and its origination.

- Track SIP and H.323 calls as they cross network boundaries.
- Avoid service disruptions by providing important service delivery data in real-time, coupled with alarm capability.
- Verify service delivery by enabling performance supervision of all services across the network allowing operators to gain insight into the subscriber experience. This prevents customer complaints, and ultimately, subscriber churn caused by poor service delivery.
- Effectively manage growth by identifying uplink volumes by service type, track download volumes and monitor traffic patterns and volume.
- Successfully launch new services by providing valuable information as to the most popular services, allowing operators to make informed decisions when planning to market services to subscribers.
- Use one system for multiple technologies and services by monitoring traditional, TDM-based as well as IP-based services such as e-mail, messaging, audio and video streaming services, wireless application protocol (WAP) and Web-based access, authentication and domain name system (DNS) and network access.
- Leverage key performance indicator (KPI)-based reports to improve the network and business by using Tekelec's KPI Service Management Packages, which provide data usage in the form of reports and customized dashboards, accessible by any authorized user through standard browsers. Tekelec offers KPI-based reports for prepaid, roaming, short message service (SMS), security management and traffic management.

Features

- Ability to integrate with Tekelec's industry leading EAGLE® 5 Integrated Signaling System (ISS) for a probeless solution.
- One platform for all network technologies; no need for separate systems to support new technologies such as VoIP, SIP and IMS.
- Real-time statistics, reporting and alarming. Reports are customer configurable, and can be scheduled or generated on demand. Users can customize dashboards to display network traffic events in real time.
- Integrated module provides alarm capability, allowing the user to define thresholds, generate and display alarms based on real-time network events.
- Users can create configurable reports and define critical metrics based on xDR data collected.
- Example of protocols supported:

- SS7, CLASS, SIGTRAN, IN, INAP
- GSM (MAP, BSSAP, GPRS, UMTS), CDMA (MAP, ANSI-41, IS-95), CAMEL, WIN, MMS, SMPP
- WAP, POP3, SMTP, FTP, HTTP
- MGCP, H.248, H.323, BICC, MEGACO, SIP, SIP-T, SIP-I, GSX, RTP, DIAMETER

USE CASE 1 – ENSURING A SMOOTH INTER-CONNECT OPERATOR TRANSITION

Problem

A wireless service provider decided to switch to a single inter-connect carrier for international roaming traffic as a cost savings initiative. On the transition day, the service provider redirected traffic to the new inter-connect operator. The traffic volumes were significantly below expected levels. The inter-connect operator insisted the originating service provider had a translation problem.

Solution

The service provider was able to quickly generate a report to capture the inter-connect operator traffic, which indicated a high level of response messages of “invalid PLMN” (public LAN mobile network). The problem source was that the inter-connect operator had not added the originating service provider to the inter-connect list.

Benefits

The diverse reporting capability of the Tekelec Performance Management solution enabled the service provider to quickly gain visibility into the problem source in two hours. The provider estimated that to accomplish the same result with traditional performance management tools would have been a two-day effort.

The quick resolution enabled the service provider to restore

service levels in a timely manner and secure a more cost-effective inter-connect agreement.

USE CASE 2 – NETWORK SERVICE QOS

Problem

A wireline service provider received numerous subscriber complaints for missing calling name service delivery. After three weeks and continuing service calls, network operators generated a QoS report targeting the CNAME queries, which happened to be provided by a regional operator

Solution

The initial Tekelec Performance Management daily report highlighted three million CNAME service queries, which appeared to be a high number. Further analysis determined that approximately one and a half million queries were re-transmissions with initial queries resulting in a time-out response and subsequent re-transmission. The result was that a significant number of calls were received without a calling name branding and with a default message of “unknown.”

The service provider summarized the CNAME service traffic information and submitted it to the regional operator. As a result, the service provider and regional operator reached an agreement that additional port and trunk resources would be allocated to achieve acceptable QoS levels required by the service provider.

Benefits

CNAME service delivery was restored two days after the service provider performed traffic analysis and isolated the issue. QoS will be monitored for future compliance.

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