Tivoli® software

Rapidly deploy new services with confidence in service quality.

Highlights

- Monitor and report on the delivered service quality for new services as you take them to market

- Deliver immediate value out of the box, addressing SQM needs cost-effectively and leveraging investments across the organization

- Monitor and communicate service quality through customer-focused reports

- Aggregate and correlate data from multiple vendors and technologies into comprehensive views of all services

- Differentiate your IT organization by offering solid SLAs to high-value customers

Telecommunications operators compete in a market defined by change and continually advancing technology. Up-to-the-minute technologies such as IP virtual private network (IP-VPN), IP television (IPTV) and Voice over IP (VoIP) are must-have offerings that can make the difference between keeping a large corporate account and losing out to a competitor.

Every time you take a new service to market, however, you face the challenge of monitoring and reporting on the delivered service quality. This is possible through the process of mapping the new service to your current service quality management (SQM) infrastructure. Even the most cutting-edge offering, after all, won't add to the value of your overall portfolio if you can't monitor every aspect of

its performance and guarantee a high level of customer service to go with it.

To grow your subscriber base, reduce churn and control costs, it is imperative that you achieve and maintain a deep understanding of the customer experience throughout your organization. The available solutions on the market have failed to offer service solution options that are easy and quick to install, and can be fit into fixed go-to-market budgets and timelines.

IBM has invested heavily in the development of commercial off-the-shelf (COTS) service solutions, and the results — IBM Tivoli® Netcool® Service Quality Manager Service Solutions — are changing the way telecommunications providers are taking new services to market and helping to crystallize

Tivoli Netcool Service Quality Manager Service Solutions model scope

| SITE SPECIFIC SQM and SLA management | ■ Resources (network elements, commercial products) ■ Reports (by customer-specific product name, market segment) ■ Alarm thresholds (set to support customer service instances) |

PREBUILT SLA CONFIGURATION
SLA management

PREBUILT SQM CONFIGURATION
Service quality management

Set of preconfigured standard reports
■ SLA conformance reports
■ KQI and KPI drill-down reports
Set of preconfigured SLAs
Set of preconfigured combined KQIs (C-KQI)
Set of preconfigured adapter KQIs (A-KQI)

GENERIC SERVICE SOLUTION ADAPTER COMPONENTS
Specific service solution adapters

Standard file formats per service solution adapters

VENDOR-SPECIFIC COMPONENTS
Mediation

understanding of the customer experience at every level of the organization.

Offering one of the most comprehensive, up-to-date and easy-to-use SQM solutions on the market, Tivoli Netcool Service Quality Manager Service Solutions meet the full range of SQM requirements, and are targeted to revenue-generating telecom services
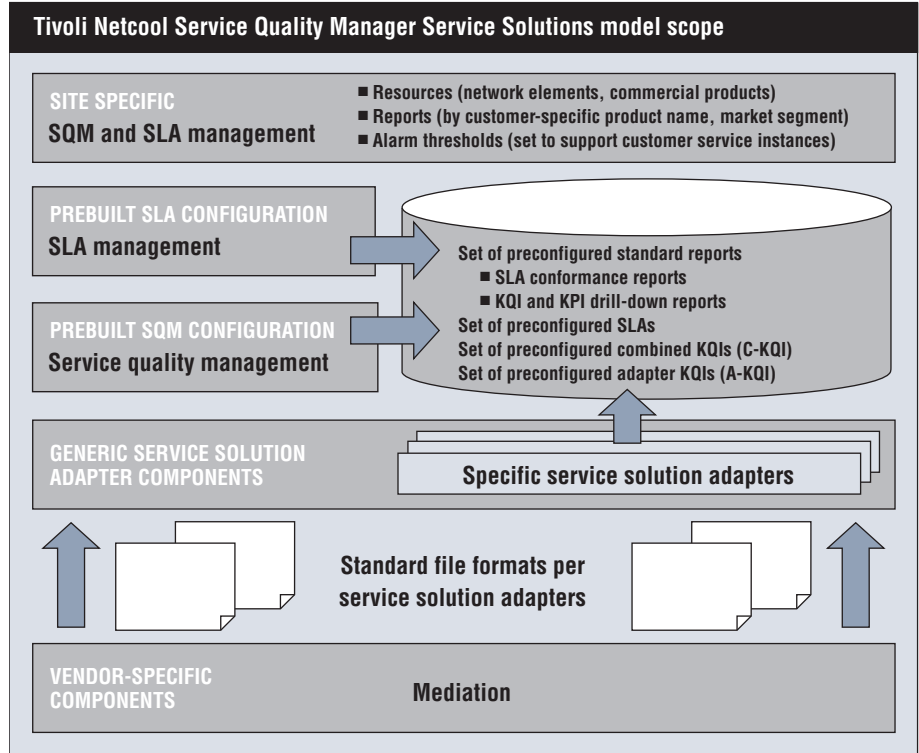
and the underlying infrastructure. Each service solution offers real-time service status monitoring as well as service level agreement (SLA) and service performance monitoring. They also enable you to easily perform root-cause analysis, to quickly pinpoint the source of the problem and speed time to resolution.

Leverage fast installation and quick ROI

Tivoli Netcool Service Quality Manager Service Solutions offer fast installation for quick return on investment and provide an efficient way to manage individual services in a cross-vendor

environment, seamlessly aggregating and correlating data from multiple vendors and technologies, including the following:

- VoIP
- IPTV
- IP-VPN
- BlackBerry

The modular aspect of Tivoli Netcool Service Quality Manager Service Solutions makes it easy to tailor your SQM solution to your business. You can begin on a limited scale, addressing

your initial needs cost-effectively, and then expand into a broader initiative later, leveraging that investment across your entire organization. Each service solution can be added, upgraded or removed independently, giving your business the agility necessary to adapt quickly to customer demands and changing market conditions.

Differentiate your organization by offering solid SLAs

To gain comprehensive insight into the customer experience, you must be able to monitor SLAs and run reports that make sense to a broad range of business users. Tivoli Netcool Service Quality Manager Service Solutions allow you to integrate teams throughout the organization and offer varying audiences the information they need in the most useful format for their function.

Each service solution collects data through predefined, open application programming interfaces (APIs). Tivoli Netcool Service Quality Manager uses that data to derive qualitative and quantitative measurements — providing you with data in terms accessible to your customers as well as your employees. KQIs are derived from a number of underlying network, application and customer-specific measurements, and

offer an enriched, end-to-end view of the service in question.

Your network and service operations teams can monitor these measurements in near-real time through prepackaged, internal SLAs. The underlying measurements can be reused across multiple SLAs, delivering information in terms relevant to various business units.

Tivoli Netcool Service Quality Manager Service Solutions give your operations and customer care teams the tools to detect and resolve service degradations, and to notify customer IT departments when they will be affected. Operations teams can monitor service quality in real time, using root-cause analysis to drill down and identify what happened when and where, and who might have been affected. Customer care teams can notify affected users when service is reduced or restored, and escalate notification to the appropriate internal department as defined in the SLA. Meanwhile, your sales team can offer quality SLAs to attract and retain high-value customers.

Help ensure VoIP service quality

VoIP technology is saving organizations a significant amount of money, not just by allowing them to avoid long-distance

call tolls, but also by consolidating the network so that all voice and data communication can be managed as a single entity. But in upgrading their infrastructures for VoIP, organizations are concerned about degradation in the quality of voice communication. Customers who use traditional voice services have a high level of expectation of voice service quality, and this increases the pressure of maintaining a high level of service quality for VoIP as well.

IBM Tivoli Netcool Service Quality Manager VoIP Service Solution gives you the tools for ensuring VoIP service quality and retaining these valuable customers. The solution computes KQIs using information from three types of data sources:

• Performance management systems
• Transactional data (for example, call detail records)
• End-to-end active testers

Tivoli Netcool Service Quality Manager VoIP Service Solution can report on user service quality on a number of predefined dimensions to support workflows within the network or service operations center. You can monitor VoIP service by offering and supporting SLAs, including internal SLAs such as

those based on network infrastructure or call type as well as customer or third-party SLAs.

Expand your share of the burgeoning IPTV market

IPTV holds significant advantages for the growing number of techno-savvy consumers and organizations looking to display and manipulate activities such as VoIP calls, videoconferencing, Internet browsing and instant messaging in a unified way. But television consumers are used to DVD-quality picture and sound, and are becoming familiar with high-definition televisions. To make IPTV a significant part of your business, you must meet strict quality standards, since you are competing not only against other providers, but also against traditional broadcast TV and DVD rental companies that customers are already comfortable with.

IBM Tivoli Netcool Service Quality Manager IPTV Service Solution offers a way to measure and monitor IPTV service quality in conjunction with all the other services you provide, helping to ensure consumers and business users receive the high quality they demand. The solution computes KQIs using data from performance management data sources, and can report on a number of predefined dimensions to support operational workflows.

The IPTV service solution is designed to support internal, customer and third-party SLAs using organizational or customer-specific quality thresholds. Internal SLAs specific to this service solution include:

- SLA for transmission network.
- Internal Broadcast TV (BTV) SLA.
- Internal Video on Demand (VoD) SLA.

The solution includes the comprehensive reporting package of Tivoli Netcool Service Quality Manager, with the addition of these IPTV-specific reports:

- BTV server
- VoD server
- Video audio quality

Help customers evolve to IP-VPN

To create a VPN, multinational enterprises have traditionally had to choose between leasing private lines, which is extremely expensive, or using the public Internet, which comes fraught with security issues. IP-VPNs offer the advantages of both options and also enable organizations to combine the transmission of voice, video and other data over one network.

As more organizations replace their older VPNs with IP-VPNs, service providers are racing to make sure they can capitalize on this next-generation

offering successfully. IBM Tivoli Netcool Service Quality Manager IP-VPN Service Solution gives you the tools you need to ensure high service quality standards, and to monitor the service with internal core network SLAs. With this solution, you can offer high-value customers the SLA guarantees necessary for transmitting valuable corporate data and business-critical applications.

Secure your position in the BlackBerry market

BlackBerry wireless solutions have become ubiquitous in both business and social situations for voice, data and application services. Enterprise customers using BlackBerry services demand quality and guaranteed access around the clock. To protect this high-value customer base, IBM Tivoli Netcool Service Quality Manager BlackBerry E-mail Service Solution helps wireless service providers maintain true service level status across complex delivery networks and measure perceived end-to-end service quality.

Tivoli Netcool Service Quality Manager BlackBerry E-mail Service Solution is highly targeted with defined service models, data interfaces and reports. SLAs specific to this service solution include a BlackBerry SLA per enterprise customer.

Tivoli Netcool Service Quality Manager Service Solutions at a glance			
Service solution	**Key quality indicators (KQIs)**	**Metrics on multiple dimensions**	**Data sources**
Tivoli Netcool Service Quality Manager VoIP Service Solution	• Call setup success ratio (CSSR) • Network efficiency rate (NER) • Answer to seizure ratio (ASR) • Post-dial delay (PDD) • Call blocking ratio (CBR) • Call completion ratio (CCR) • Mean holding time per answered call • Short call ratio (SCR) • Round-trip delay (RTD) • Jitter (packet delay variation) • Packet loss ratio (%) • Listening quality MOS (mean opinion score) • Conversational quality MOS	• Enterprise • Call type • Call feature • Subscriber ID • Network element	• Performance management • Probe • Call detail records (CDRs)
Tivoli Netcool Service Quality Manager IPTV Service Solution	• Packet loss • Jitter • Latency • VoD session initiation success rate (VSISR) • Average channel change time • BTV channel access success rate (BTVCASR) • Average video setup time • Average video occupancy • Listening quality MOS • Conversational quality MOS	• Broadcast TV server • VoD server • Digital subscriber line access multiplexer (DSLAM) • Channel ID • Video ID • Codec	• Performance management
Tivoli Netcool Service Quality Manager IP-VPN Service Solution	• Latency per VPN link • Core network latency • Enterprise latency • Packet loss per VPN • Packet loss per VPN link • Core network packet loss • Enterprise packet loss • Jitter per VPN • Jitter per VPN link • Core network jitter • Enterprise jitter	• Subscriber groups within the enterprise • VPN link • VPN	• Performance management
Tivoli Netcool Service Quality Manager BlackBerry E-mail Service Solution	• BlackBerry accessibility • BlackBerry latency • BlackBerry throughput • Diagnostics • BlackBerry usage KQI • Data source integrity	• User groups, for example, groups of individual BlackBerry users • Individual users • BES	• Performance management

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For more information

To see how Tivoli Netcool Service Quality Manager Service Solutions can help you streamline the development of SQM solutions for all your services, contact your IBM representative or IBM Business Partner, or visit **ibm.com**/tivoli

About Netcool software

The IBM Tivoli Netcool software portfolio is used by many of the world's leading service providers for its ability to consolidate and manage events, network performance, service quality and the customer experience across some of the largest, most complex, heterogeneous environments. The Tivoli Netcool software portfolio offers broad collection, consolidation and correlation capabilities to help organizations rapidly identify and resolve problems and improve operational efficiency. By combining real-time service modeling and impact analysis capabilities with scalable fault and network management, the Tivoli Netcool software portfolio helps organizations to effectively manage the availability, performance, service quality and security of business applications and services.

About Tivoli software from IBM

Tivoli software provides a set of offerings and capabilities in support of IBM Service Management, a scalable, modular approach used to deliver more efficient and effective services to your business. Helping meet the needs of any size business, Tivoli software enables you to deliver service excellence in support of your business objectives through integration and automation of processes, workflows and tasks. The security-rich, open standards–based Tivoli service management platform is complemented by proactive operational management solutions that provide end-to-end visibility and control. It is also backed by world-class IBM Services, IBM Support and an active ecosystem of IBM Business Partners. Tivoli customers and business partners can also leverage each other's best practices by participating in independently run IBM Tivoli User Groups around the world — visit www.tivoli-ug.org

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