Image text content is already in a natural plain text representation.
Gain a complete, end-to-end view of your triple play services — including the network and application infrastructures

Although traditional services are comprised of switches, routers and gateways, more complex IP services like VoIP and IPTV rely on additional layers of applications and servers that drive the service and content. As a result, effective management of these services requires you to measure quality indicators such as response time, availability of services, jitter, latency, packet loss and much more. To help ensure quality of experience (QoE), you need a complete, end-to-end view of your services.

The Tivoli Netcool portfolio provides carrier-class tools for managing the entire Layer 1–Layer 7 infrastructure and the dependencies between the resources that deliver services to your customers. The Tivoli Netcool portfolio also empowers you to manage operational resources better and gain more control over the customer’s QoE.

With the Tivoli Netcool portfolio, you can calculate the percentage of service uptime, traffic speed and volume. You can also:

- Receive dashboard reports that integrate information across layers — end to end — so that you can quickly identify the causes of service degradation.
- Enrich reports to illustrate the degree to which specific SLA performance guarantees are met.
- Determine the events that will trigger service cessation for a given area, including the way service is affected — for example, by differentiating between faults that result in loss of video and those that make it impossible for end users to access a VoD application.

To maintain high quality for your triple play services, you also have to monitor the application infrastructure, including call servers, VoD libraries, service directors and other applications. With the Tivoli Netcool portfolio, you can manage the physical network as well as the applications and databases that are critical to your next-generation services. As a result, you gain real-time insight into the performance of your applications and their relationships to service-affecting faults.

Help optimize performance for your network and services

Concerns about service performance are one of the main reasons service providers lose sleep at night. Too little capacity and your services will degrade. Although a little jitter or
latency may not be very noticeable for your instant messaging service, it could have serious effects on your IP voice and video services.

An integrated fault and event management solution, the Tivoli Netcool portfolio provides a historical record of your service and underlying network performance, and also shows you how it is trending. So you can proactively manage capacity and performance — before services are affected. And because the solution integrates with inventory, provisioning, customer relationship management (CRM) and other operational systems, you can seamlessly share information from these systems with management and business teams — and even customers.

**Launch new IP services quickly, without adding costs**
To reap the rewards of the triple play market, you need the flexibility and scalability to grow your customer base at warp speed and offer new services on a rolling basis — handling changes routinely while slashing time to market. Because the Tivoli Netcool portfolio creates a single carrier-class platform to support a variety of services and a wide range of devices, it provides this nimbleness for today’s services and future services. As a result, you can operate with increased efficiency and lowered operating costs as you expand your service offerings. The Tivoli Netcool portfolio also helps simplify visualization and modeling functions and provide prebuilt integrations to promote business flexibility.

**Get insight into the customer experience to improve satisfaction and help reduce churn**
Managing customer satisfaction and the quality of delivered services are key issues for triple play service providers. You can use the Tivoli Netcool portfolio

More than 1,800 customers, including the top 20 service providers, rely on the Tivoli Netcool portfolio to help maximize service availability and effectively manage complex network operations environments.
to increase customer satisfaction by monitoring the quality of service in real time and automating many manual processes and steps that are part of the service management process.

The Tivoli Netcool portfolio gives you insight into the perceived customer experience for voice, video and data services. By proactively monitoring the user’s service experience in real time — from the user’s perspective rather than from the network’s perspective — you can compete more effectively and help reduce churn.

And because the Tivoli Netcool portfolio fosters a proactive, business-focused approach to network management, it allows operations teams to fix problems before they affect the customer’s experience. As a result, your skilled technicians can focus more on customer management and less on technology. When a performance issue is detected, reports allow you to:

- View KPIs and KQIs in real time.
- Correlate service events with customer-relevant data.
- Provide customer service representatives with critical information.

## Smooth migration to IP networks

Unlike the reliable yet sealed-off world of traditional services like telephone and television, today's IP services and networks are volatile. Sophisticated IP services have also been built as separate silos using a variety of technologies — making them a challenge to manage effectively. Yet customers who are accustomed to near-perfect quality expect the same excellent QoE from your IP services that they've always received from traditional services.

As you migrate from traditional to IP environments, you need a rigorous carrier-class fault and performance management solution for all aspects of your triple play services and underlying IP network. The Tivoli Netcool portfolio can monitor a broad range of

### Samples of monitoring KPIs and KQIs in real time

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<thead>
<tr>
<th>Service</th>
<th>Get KPIs and KQIs for:</th>
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<tbody>
<tr>
<td><strong>VolP quality</strong></td>
<td>- Mean opinion score (MOS) — derived both from R-Factor/network impairment and Perceptual Evaluation of Speech Quality (PESQ)</td>
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<td>- Grade of service (GoS) — percentage of calls blocked by the network/platform</td>
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<td>- Drop call rates — normal termination/abnormal</td>
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<td>- Post Dial Delay (PDD)</td>
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<td></td>
<td>- Traffic load</td>
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<td>- MOS</td>
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<td></td>
<td>- Peak signal-to-noise ratio</td>
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<td>- Mean squared error</td>
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<td>- Channel surfing time</td>
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<td>- Video stream utilization</td>
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<td>- Synchronization errors</td>
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<td>- Blockiness/blurriness/jerkiness</td>
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applications, technologies and vendor devices to enable faster MTTR, fewer service degradations and “lean operations” through increased operational efficiency.

Maximize current and future investments
Tivoli Netcool software integrates smoothly with a variety of operational support systems and many leading software and hardware vendors’ products and tools. By effectively managing new technologies and heterogeneous environments, you can make the most of your current investments — while preparing for the future.

The Tivoli Netcool portfolio helps you facilitate efforts to comply with frameworks and standards such as those from the TeleManagement Forum and the IT Infrastructure Library® (ITIL®). And because Tivoli Netcool software is ISO 9001 certified, it can help you achieve Six Sigma quality and facilitate compliance with Sarbanes-Oxley.

About Netcool software
The IBM Tivoli Netcool software portfolio is used by many of the world’s leading enterprise, service provider and government organizations for its ability to consolidate and manage events 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 management, the Tivoli Netcool software portfolio helps organizations to effectively manage the availability, performance and security of business applications and services.

About Tivoli software from IBM
Tivoli software provides a comprehensive 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. Meeting 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 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.

For more information
To learn more about how the Tivoli Netcool portfolio can deliver real business results by giving you insight into performance and perceived QoE and helping smooth your transition to IP environments, contact your IBM representative or IBM Business Partner, or visit ibm.com/tivoli