CHAPTER 9

Riding the Rich-Media Wave

Streamed and live content delivered to PCs, mobile devices, and set-top boxes is creating entirely new communications and entertainment experiences for subscribers. Consumers have quickly grown accustomed to watching and listening to their choice of content, on demand, from any location, thanks to the latest Internet and mobile service delivery models. Businesses, too, are stepping up their use of video on demand (VoD) and audio podcasts in efforts to improve communications with employees, customers, and business partners.

Content that might have once been delivered only over traditional broadcast, cable TV, and satellite networks might now be delivered by public Internet services, specialized Internet subnetworks called content delivery networks (CDNs), and even cellular networks. Operators of all these network types are thus challenged to monitor and manage large volumes of competitive triple-play voice, data, and video traffic.

Today, much of the video-based content currently tapped by subscribers is accessible from a multitude of Web sites via a basic broadband Internet access service. For example, YouTube—the fiercely popular, free Web site where users upload, view, and share video clips—represents the trend of the day toward Web-based video. Meanwhile, however, IPTV might be a growing candidate for your service portfolio, too. IPTV is a digital television service usually delivered over a closed IP network infrastructure. It encompasses both live TV as well as stored VoD and is delivered to a PC or to a set-top box connected to a TV at the subscriber location.

Not only traditional service providers, but municipalities, alternative carriers, and IP content owners are getting into the act of providing triple-play services that add Web-based VoD and IPTV to data access and voice offerings using a number of creative business models. For example, any of these alternate providers might elect to install an access network to deliver content created or owned by another IP service provider. Or, they could host their own content and run a rich-media content delivery service themselves.

Provider Goals

Any provider offering a varied portfolio of services like this will have a couple of key goals. One, of course, is maintaining quality of service (QoS) for the various rich-media capabilities and real-time voice over IP (VoIP). See Chapter 8 for a discussion of VoIP protocols, characteristics, and management challenges. As discussed throughout this handbook, the deep packet inspection (DPI) and traffic-shaping capabilities of an intelligent IP service optimization system help providers ensure that the proper network resources are consistently matched to the various content flows to sustain high-quality subscriber experiences.

In addition, service providers will want to follow usage trends of the various services to assist in developing new service packages. For example, you might wish to identify and track usage volumes of Web-based VoD—accessible through a basic broadband Internet access service—and compare its popularity to that of your own IPTV VoD and/or live IPTV, provisioned over a separate access network.

The DPI component of an intelligent IP broadband service optimization system recognizes packet flows of each type of traffic. The system collects this information, classifies it, and tracks its usage volumes over time. Providers, then, might identify subscribers that tap into Web-based VoD content frequently and perhaps create IPTV service packages that match various subscriber groups' VoD viewing habits. These packages could be fee-based or free of charge and supported instead by advertising revenues.

Web-based video and other content can mean increased revenue potential. But streaming and live content can also dramatically increase the network traffic burden. Managing that traffic so that subscribers maintain the quality of experience (QoE)

that will keep them on your network service is essential. The service optimization techniques described throughout this manual (see Chapters 3, 4, and 5) create the fundamental management system in which rich media can perform reliably.

Building Rich-Media Policies

As with VoIP, Web-based video is subject to degradation caused by latency, jitter, and packet loss, which result primarily from traffic congestion. See Chapter 8 for a detailed discussion on controlling such network metrics.

Generally, QoS for IPTV traffic is handled directly in the carrier network infrastructure equipment. However, the Web-based multimedia traffic running alongside the IPTV content across the last-mile broadband access connection must be assigned policies that guarantee users consistent, high-quality experiences, even during congestion periods. As with VoIP, policies set using an intelligent IP service optimization system can manage rich content on a hierarchical basis that addresses both service and subscriber management issues.

You might consider video to be a specialized service used by only a certain segment of your subscriber base. However, bear in mind that virtually *all* subscribers are subject to critically appraising its quality on your network. For example, streaming video is part of Internet advertising associated with most mouse clicks. About 100 million video clips are reportedly viewed daily at YouTube. Virtually all news organizations, from TV networks to print journals, now include video clips embedded in their online stories. And Web cams have made personal videos *de rigueur* on most personal Web pages.

In short, Web-based video and IPTV are here to stay as the third component in the triple play, and their future is guaranteed to grow. A 2006 report by The Insight Research Corporation, Boonton, New Jersey, predicts that the number of broadband residential subscribers will reach 88 million homes (75 percent of all U.S. homes) by 2011. Since broadband users are those who are most likely to request streaming content, Insight's research suggests that broadband service and rich-media usage will grow in parallel.

Chapter Summary

The advent of on-demand content delivery means increased traffic on your network, which challenges you to ensure subscriber QoE in the delivery of VoD, podcasts, live TV programming, video news clips, and other content. You can use intelligent IP service optimization to distinguish, optimize, and protect rich-media traffic on your network, possibly as a third component of a triple-play service portfolio that includes VoIP and data.

From a service-creation perspective, it is valuable to use the monitoring capabilities of your intelligent IP broadband optimization system to track subscriber usage of Web-based content, such as streaming VoD downloaded from particular Web sites. Such auditing allows you to identify top video watchers and, if you are so inclined, create IPTV or other rich-media service packages that you target to that subscriber group.

###