



Windows Server® 2008 R2

Customer Solution Case Study



Customer: Internap

Web Site: www.internap.com

Customer Size: 400 employees

Country or Region: United States

Industry: Internet service providers

Customer Profile

Based in Atlanta, Georgia, Internap helps companies maximize the performance, reliability, and value of Internet-based applications. In 2008, the company earned U.S.\$254 million in revenue.

Software and Services

- Microsoft Server Product Portfolio
 - Windows Server 2008 R2 Enterprise
 - Windows Web Server 2008 R2
- Technologies
 - Hyper-V
 - Internet Information Services 7.5
 - Microsoft Silverlight

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Internet Solutions Company Boosts Scalability of Content Delivery Network

“With IIS 7.5, we can create a native Silverlight infrastructure and configure our content delivery network so that it provides superior live and on-demand media offerings for our customers.”

Peter Evans, Senior Vice President of Marketing, Internap

Internap deployed Internet Information Services 7.5 in the Windows Server® 2008 R2 operating system to implement new capabilities in its content delivery network. As a result, the company can replace Apache Squid on its edge servers, cut costs, and improve scalability, reporting, and the users' Web experience.

Business Needs

Internap provides end-to-end services for corporations that deliver applications and content over the Internet. More than 3,000 organizations, including Fortune 500 companies, engage Internap to help expedite the flow of information to international customers and stream video content.

One way that Internap helps to speed the delivery of data from Web sites is with a content delivery network (CDN). Rather than storing content on Web servers at one geographic location, the CDN stores content on thousands of servers at 85 sites around the world. In addition, the company uses its Managed Internet Route Optimizer™ (MIRO) technology to monitor

the performance of each Internet backbone, and route traffic across the best path. This provides faster and more reliable content and data delivery than traditional routing methods.

Previously, several key technologies supported the company's CDN. Web servers ran Internet Information Services (IIS) 7.0 and the Windows® Web Server 2008 operating system. Edge servers used Apache Squid software to manage requests sent with the Hypertext Transfer Protocol (HTTP). In addition, Apache Squid cached frequently accessed content so that if hundreds of requests came in for the same video, for example, the edge server could quickly service the request without going back to a content server. To

support the delivery of video, media servers ran Flash Media Server and Windows Media® technologies on the Windows Server® 2003 operating system.

Although the CDN solution met its requirements, Internap continued to evaluate emerging technologies to see if any could boost the performance of content delivery, reduce costs, and collect more detailed data about the type of media users' access and how they consume it.

Solution

In September 2009, Internap decided to take advantage of Internet Information Services 7.5 in Windows Server 2008 R2 to simplify its CDN and enhance service offerings, especially for applications built with the Microsoft® Silverlight™ browser plug-in. The company was also eager to make use of new features in Windows Server 2008 R2 such as Hyper-V™ technology for server virtualization.

Internap wanted to use the IIS Media Services 3.0 extension for IIS 7.5 to stream live and on-demand video for Silverlight-based applications over HTTP. It also sought to use adaptive bit rate streaming, which automatically adjusts the quality of video based on changing network conditions. In addition, by using the Application Request Routing (ARR) 2.0 extension for IIS 7.5, engineers could configure IIS Web servers so that they can support edge caching. As a result, Internap could replace Apache Squid. The company could also enhance its control over the CDN with ARR because it supports rule-based routing of HTTP server requests. Another advantage to using ARR is that engineers could set up primary and secondary caches to support high traffic volumes. New cache management capabilities in ARR, such as wildcard matching to find specific types of objects, could also simplify administration.

Engineers were also interested in the new IIS Application Warm-Up extension, which they can use to preload applications on Web servers if they anticipate a high volume of requests for a particular video. And by implementing the Advanced Logging extension for IIS, Internap can increase the level of detail collected about consumers' media consumption.

In September 2009, Internap began to deploy Windows Server 2008 R2 on media servers, and it set up virtual environments with Hyper-V. Engineers also began to deploy Windows Web Server 2008 R2 on edge servers and to replace some instances of Apache Squid with IIS 7.5.

Benefits

By deploying its new solution, Internap can cut its expenses, provide better viewing experiences for Web consumers, boost the scalability and level of control it has over its CDN, and enhance the reports it can provide customers.

- **Reduces costs.** With IIS 7.5, Internap expects to reduce its total cost of ownership. The company can eliminate Apache Squid and replace it with IIS 7.5 so that edge servers can manage two functions—which will simplify administration. In addition, the new solution minimizes the need for additional software and hardware. "The ability of IIS to deliver adaptive bit rate streaming over HTTP means we can quickly deliver this capability to customers without making sizable investments in our CDN," explains John McIlwain, Director of Product Management for CDN, Internap.
- **Improves user experience.** New capabilities such as adaptive bit rate streaming and multilevel caches mean that Internap can deliver the best

possible viewing experience for consumers—regardless of the client device they use. Peter Evans, Senior Vice President of Marketing at Internap, says, "With IIS 7.5, we can create a native Silverlight infrastructure and configure our content delivery network so that it provides superior live and on-demand media offerings for our customers."

- **Boosts scalability.** The new solution is more agile and easier to adapt to changing requirements. With Hyper-V, Internap can quickly set up virtual server environments to support new services or add capacity. In addition, engineers can use the Application Warm-Up extension to prepare Web servers so that they are ready for increased site traffic as a result of a sporting event or a new video release. Engineers also have more tools to help them adapt to change. "We can use ARR and IIS 7.5 to create multilevel caches so that we can scale out our infrastructure more easily than we could before," says McIlwain. "This will be especially useful for our customers that use large videos and files."
- **Enhances reporting and control.** With its new solution, Internap can collect more of the information it needs to help customers design Web-based offerings that better meet changing requirements. In addition, engineers can set up specific routing rules for HTTP requests. "The scripts that are available with IIS 7.5 give us greater control over our environment and improve reporting capabilities," says Evans. "By using the information collected with the Advanced Logging extension, we gain more options for enhancing our reporting feature sets. As a result, we can capture detailed information about how people consume media and present it to our customers in a very meaningful way."

Windows Server 2008 R2

Windows Server 2008 R2 is the latest version of the Windows Server operating system from Microsoft. With Windows Server 2008 R2, you can create solutions that are easier to plan, deploy, and manage than with previous versions of Windows Server. Building on the features, security, reliability, and performance provided by Windows Server 2008, Windows Server 2008 R2 extends connectivity and control to local and remote resources. This means that your organization can benefit from reduced costs and increased efficiencies gained through enhanced management and control over resources across the enterprise.

For more information, go to:

www.microsoft.com/WindowsServer2008R2