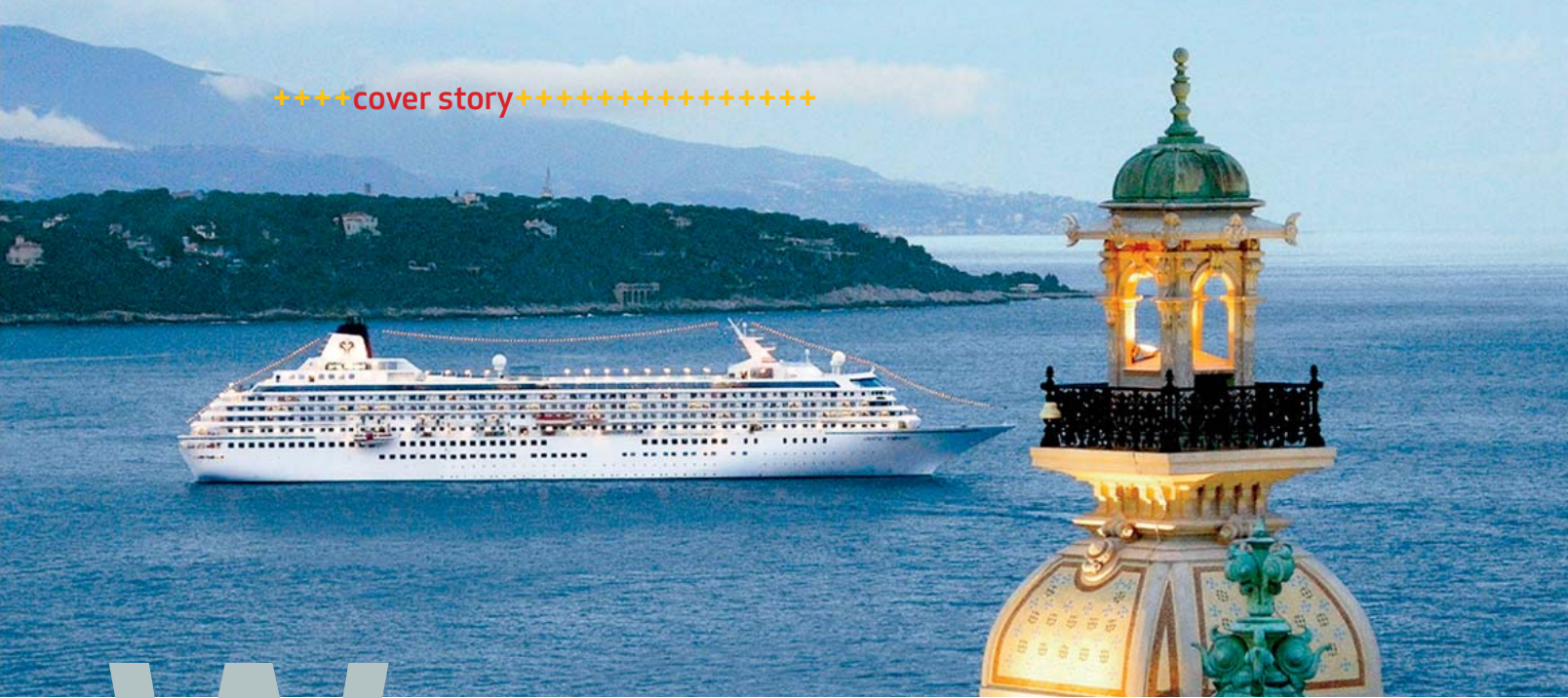


# F5 goes to sea with Crystal Cruises

Passengers aboard the Crystal Symphony cruise the high seas—and the Internet—in style, with speedy connections, thanks to F5 BIG-IP WebAccelerator.

Luxury cruise liner triples Internet performance and doubles Internet usage with web acceleration technology.





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hen the rich and famous go on vacation, they want to get away from almost everything—except, of course, the Internet. The luxury cruise line Crystal Cruises caters to affluent go-getters who spend from 12 to 108 days at sea at a time. They're used to the best of everything, and Internet connectivity is no exception.

Crystal Cruises knows that while luxurious staterooms and stunning vistas go a long way toward keeping its high-end clientele happy, it also needs to provide stellar Internet response times for executives checking email, personal investors trading stocks, and grandparents sending trip photos to their families.

“Great on-board technology is a very important selling point for us—sometimes it’s the only way that some executives will accompany their families on a vacation,” explains Bjorn Andersson, manager of shipboard and network operations for Crystal Cruises. “And we were getting hammered on our Internet speeds.”

Fast Internet response times can be a tall order when you’re at sea, where satellite is the only connectivity option. But Crystal Cruises has addressed the problem by installing the F5 BIG-IP WebAccelerator appliance in its Los Angeles data center. With the move, the company has dramatically boosted Internet performance as well as customer satisfaction, which has increased Internet usage, enabled bandwidth savings, and resulted in additional revenue.

### Less-Than-Tranquil Seas

In this day and age, all cruise ships offer Internet access. But with no access to hard-wired broadband circuits in the middle of the ocean, cruise operators depend on satellite communications for Internet access—and satellite service is notorious for its long latency times, resulting in frequent delays.

On the average four-night Bahama-hopper, lethargic Internet connections aren’t a deal-breaker, as guests simply do without or visit Internet cafés on shore. But for Crystal Cruises, slow Internet access was a problem that created frustration that would blow like a Category 5 hurricane.

“Our customers are trading stocks, paying bills, moving money around, and running businesses,” Andersson says. “They’ve become very dependent on the Internet in their everyday lives, and that dependency doesn’t stop when they take a vacation. Our customers come to us to relax and get away from problems; we don’t want them to get stressed out over slow Internet speeds.”

BY JANE GLASSER

Photographs by Dave Lauridsen

### CRYSTAL CRUISES: NOTHING BUT THE BEST

In 2006, travelers voted Crystal Cruises the No. 1 cruise line in annual reader polls taken by *Conde Naste Traveler*, *Travel & Leisure*, and *CNT U.K.* The company’s two ships, *Crystal Symphony* and *Crystal Serenity*, each carry approximately 1,000 passengers. Crystal Cruises boasts a crew-to-guest ratio of nearly 1:2 and the largest square footage per guest of any cruise line. The company also shines with features such as world-class restaurants and high-caliber lecturers that include former U.S. ambassadors.

For more information, visit [www.crystalcruises.com](http://www.crystalcruises.com)

Plus, customers were getting heated over paying for Internet access, on top of premium rates for a luxury cruise, and suffering through aggravating Internet performance. “Being No. 1 means we have to exceed, not merely meet, customer expectations,” Andersson says.

Crystal Cruises tried increasing the bandwidth on its satellite link at great expense, but the move didn’t translate into an improved guest experience because of the more than one-second satellite delay. The company also tinkered with quality-of-service parameters, to no avail, and considered installing more powerful routers but deemed them too expensive. Andersson and his team even thought about limiting web traffic but decided that would only further erode customer service.

### WebAccelerator to the Rescue

Every time a technology vendor came to call, Andersson proposed a simple bargain: “If you can speed up my onboard Internet speeds, you’ll have my business.” CDW, a leading technology solution provider, suggested F5 BIG-IP WebAccelerator, which speeds up web-based applications by employing intelligent technologies such as Intelligent Browser Referencing (IBR) and Dynamic Data Offload (DDO).

IBR eliminates the need for web browsers to download repetitive or duplicate data, and ensures the best use of bandwidth by controlling the browser behavior when caching and compressing content. This reduces the number of requests that would traverse the satellite link. Other technologies, such as IBR Multiconnect, enable the browser to open multiple connections with a web server, increasing parallel data transfers. Using IBR, BIG-IP WebAccelerator can increase interactive web applications’ performance by up to 10 times.

DDO, meanwhile, offloads from the web server chores such as SSL acceleration, caching, compression, and HTTP protocol optimization. By enabling WebAccelerator to take on such compute-intensive chores instead of the server, DDO effectively increases web server capacity.

Crystal Cruises tested WebAccelerator on one of its ships last summer. The company wanted to see a 50 percent improvement in Internet performance, and didn’t want customers to have to make any modifications to their PCs or install software to take advantage of the Internet speedup. BIG-IP WebAccelerator exceeded Crystal Cruises’ performance expectations and required no additional software on client PCs. The company purchased and deployed BIG-IP WebAccelerator last August and has seen even more impressive results aboard its *Crystal Symphony* and *Crystal Serenity* vessels.

Now, all Internet traffic flows through the Los Angeles-based BIG-IP WebAccelerator, which caches web pages the first time they’re accessed. All subsequent hits to the same page are lightning-fast, since they are supplied from the cache and don’t have to travel over the satellite link to the Internet. BIG-IP WebAccelerator also provides a high level of compression, which reduces the amount of traffic that has to traverse the satellite links and contributes to increased performance.

Because BIG-IP WebAccelerator sits in Crystal Cruises’ data center, it’s easy for the central IT staff to monitor. The



Passengers enjoy quick, hassle-free Internet service in Crystal Symphony’s onboard computer lab.

centralized setup also means the company installed no new gear onboard its ships, which means there are no worries about having to troubleshoot or repair the system at sea. And passengers don’t have to change anything on their PCs to take advantage of the increased speed.

“Crystal Cruises faced a common problem in an unusual setting,” says

Louis Campanella, systems architect for acceleration solutions at F5. “Many businesses deploying web-based applications struggle with poor performance because of network latency, data security requirements, and other issues. BIG-IP WebAccelerator boosts the performance of any web-based workload, including portal, CRM, ERP, and collaboration applications.”

### Performance Triples, Usage Doubles

Before installing the F5 BIG-IP WebAccelerator, the top speed Crystal Cruises could hit on its satellite Internet links was 664 Kbps to 710 Kbps, and that was for a mere two to three hours per day for 18 to 27 days per month. After installing BIG-IP WebAccelerator, the company saw Internet throughput shoot to 2 Mbps to 3 Mbps for 12 to 13 hours per day, 30 days per month—an improvement of roughly 300 percent to 500 percent.

“The difference was dramatic and a relief to us and our customers,” Andersson says. “Shortly after installing F5 BIG-IP WebAccelerator, a reviewer from the ‘Cruise Week’ newsletter came on board and was amazed at our Internet speeds. He wrote, ‘The Internet connection ... is absolutely the fastest I have encountered at sea. It symbolizes the smoothness of the whole experience.’ That’s exactly the reaction we want from our guests.”

Since Internet performance has improved, guests have been purchasing larger Internet packages—30 hours versus 10, for example—because they’re able to do more. “Before installing the WebAccelerator, we cut our Internet fees in half because of all the complaints,” Andersson says. “However, since installing the WebAccelerator, we’ve doubled or tripled the number of users and increased our Internet-derived revenue, even with the reduced fees. Also, we were not able to use the bandwidth we had purchased because of transmission inefficiencies. With the WebAccelerator, we’re able to take full advantage of every bit of bandwidth. In terms of bandwidth savings, we’ve received a one-month return on our WebAccelerator investment.”

Another Crystal Cruises amenity to benefit from faster Internet speeds is its Computer University@Sea (CU@Sea) program. CU@Sea provides group and individual instruction on using PCs, digital cameras, and other computer-based services, as well as some travel-related courses. For example, on the company’s 108-day world cruise, a college professor teaches classes about the places visited. Classes have always been popular but were a challenge with the slow Internet speeds. Today, Crystal Cruises is able to deliver an exceptional, frustration-free learning experience.

From here on out, it’s smooth sailing on the high-speed seas for Crystal Cruises. ✨

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