

# HP ProCurve Networking Case Study

Boston Marathon



Photo by Victah Sailer, Photo Run  
Provided courtesy of Boston Athletic Association

"This is a transient network that must be set up within a matter of days in a chaotic environment. HP ProCurve's Adaptive EDGE Architecture™ provides the secure mobility solution necessary to assure the reliability of both the wired and wireless components of the network."

- Kevin Meany, Chief Network Architect  
Boston Marathon

## Customer at a Glance

The Boston Marathon, held annually on the third Monday in April - Patriots' Day -, is the world's oldest annual marathon and ranks as one of the most prestigious road racing events. The Boston Athletic Association has managed this American classic since its inception in 1897. Today, the Boston Marathon is the second most widely covered sporting event in the world - second only to the NFL Super Bowl - in terms of media coverage.

## Highlights

The story of the Boston Marathon's HP "Race Day Network" begins in 1996, when in commemoration of the Marathon's 100th running, the Boston Athletic Association sought to further enhance the prestige of its premier event by aggressively using technology to provide instantaneous, real time results through the web to the media and ultimately the public. Over the last eight years, the Marathon has continuously evolved and expanded its network to enhance the media coverage of the race and ensure accuracy of timing and scoring.

The "Race Day Network" for this high profile, annual event is a daunting task that must be set up in just six days. With no margin or time for error, security, performance, and reliability were vital considerations when selecting the enterprise networking solution. "When we were reviewing the offerings of other networking vendors, ease of set-up and reliability were our primary concerns," said Kevin Meany, network manager for the Boston Marathon and director of technology operations for Versatile Communications, Inc. "We chose the HP ProCurve solution because it is the only solution that provides the performance and security features necessary to ensure an absolutely reliable network."

### HP ProCurve Goes the Distance for the Boston Marathon

Since its inception, the primary goal of the Marathon Race Day Network is to provide the press with real-time race information through the web and other proprietary technologies. As the network has evolved, it has expanded to provide support for local law enforcement agencies, race information to the public, and runner status information to family members. Each year John Burgholzer, technology coordinator for the Boston Marathon, works with Meany to determine the needs for the Race Day Network. Meany and his team are responsible for designing the network.

The entire Race Day Network consists of about a dozen network segments all connected to the Marathon's main computer room located in the Copley Plaza Hotel in downtown Boston. Here reside a number of servers - email, Internet, and web servers - all connected via gigabit copper to a HP ProCurve Switch 5300, which acts as the core of the network. "We chose the 5300 for the core because it offered routing capabilities, modular flexibility, and performance for high volumes of data transfer," said Meany. "Plus the redundant power supply and

switch meshing capabilities were very important to us. If the main computer room goes down we have absolutely no time to fix it during the race or even in the days and hours leading up to it. HP ProCurve was the only vendor to offer switch meshing capabilities at Layer 2 that allows us to set up redundant links."

Beginning the Tuesday morning before the race, Meany and his team begin setting up the network starting with the main computer room. Within the first eight hours, the backbone infrastructure and pressroom must be set-up. Wednesday and Thursday are quiet days spent connecting auxiliary computer rooms within the hotel. On Friday, the team begins working feverishly to connect the race course, finish line and other areas outside the hotel before the race begins on noon Monday.

### Race Day Results with HP ProCurve

On Race Day, the Marathon uses a chip-and-mat timing system to gather racing data from the course. Each runner's shoe or wheelchair contains a chip and as the runner passes over the 11 mats placed along the course, the information is fed real-time to the pressrooms at the Copley Plaza hotel. Also, spotters along the course, equipped with wireless HP IPAQ Pocket PCs, enter additional data into the network. "We used the HP ProCurve Wireless Access Points 520wl for our wireless connections," said Meany. "It's vital for us to ensure the security of our network and HP ProCurve Networking's Adaptive EDGE Architecture permits secure, fast and appropriate access by placing the intelligence for managing both wired and wireless connections at the edge of the network where we need it."

Instantaneous feed of the race data comes into the Copley Plaza pressrooms through three fully meshed HP ProCurve 5300 switches. The network not only "scrolls" real-time data from the mats and spotters but also compiles "split" reports for the press detailing the positions of the leaders at each mile for each of the four main races (Men's, Women's, Men's Wheelchair and Women's Wheelchair). Remote press can also cover the race by accessing press-only areas on the web site. Information is pushed to the web every seven minutes.

At the finish line, a mat captures the race results, which are fed back to the main computer room via a T1 connection. The live announcer uses the network to access

## Hardware

- HP ProCurve 520wl Wireless Access Point
- HP ProCurve Switch 5300xl Series
- HP ProCurve Switch 2650
- HP ProCurve Switch 2626
- HP ProCurve Switch 2524
- HP ProCurve Integrated System 760wl
- HP ProLiant Servers

## Software

- Lifetime software upgrades included in purchase price
- Network management software included in purchase price
- HP Network Management software

## HP Services & Support

- Lifetime warranty with next-business-day advance replacement (available in most countries) on most products for as long as the customer owns it\*
- Telephone support available during normal business hours
- Technical product support available via e-mail
- Comprehensive network design and configuration services offered at no extra charge

\*The HP ProCurve Routing Switch 9300m series and Secure Access 700wl series have a one-year warranty with extensions available.

background information on the athletes as they approach the finish line. ESPN provides live television coverage using the athlete profiles and also has a direct feed to the "scroller" report that provides a chroma-key ticker at the bottom of the viewers' television screen.

The network supports several systems developed to provide information to families and friends of the runners. In the family meeting area, volunteers use various tracking systems to assist family members in locating runners. All entrances and exits from the medical tents are tracked on the network. Prior to the race, runners may also provide email addresses or cell phone numbers of family or friends. During the race, the network transmits text messages detailing the runner's status. In 2002, the inaugural year for the system, the network transmitted more than 68,000 of these "status" messages - in 2003, it increased to more than 100,000.

As the Boston Marathon goes forward into its second century, Meany and Burgholzer plan to expand coverage to the more remote areas of the race by adding additional mats and more wireless connections. According to Meany, this means adding a HP ProCurve Integrated Access Manager 760wl for secure mobility. "We want to go to HP ProCurve across the board," said Meany. "HP ProCurve gives us exceptional value without skimping on features or performance - the total cost of ownership is exceptional - the lifetime warranty\* alone is a great reason to have one in your closet."

Burgholzer adds, "We've challenged the network year after year and HP ProCurve continues to perform flawlessly. We are confident that the HP ProCurve Networking solution will allow us to continue to expand the network, add more wireless and move even larger amounts of data."

## Business Results

- By using HP ProCurve Networking solutions, the Boston Marathon, has enjoyed increased press coverage, particularly international coverage, by providing reliable real-time results to press room and direct feeds to ESPN and other media outlets. In addition to the approximately 1200 press members in attendance at the Copley Plaza pressrooms, more press are able to cover the event from remote locations due to the quality and reliability of the real-time information available to the media on the Marathon's web site.
- As the Marathon continues to expand its coverage to the remote parts of the race through the use of more wireless and wired connections, the HP ProCurve Adaptive Edge Architecture and its outstanding security mobility solution adds intelligence at the edge of the network to ensure that each user is authenticated at the point of connection so the network security will not be compromised.
- The scalability of the HP ProCurve solution has allowed the Marathon Race Day Network to easily expand to provide better tracking of all 20,000 runners and enhanced support for state police, emergency medical services and homeland security needs.
- HP ProCurve's unmatched reliability has assured the accuracy of the results and enhanced the adjudication of the scoring and timing.

## For more information

When you are ready to explore the benefits an HP ProCurve Networking solution can offer you, call HP at 1-800-975-7683. To learn more about HP ProCurve Networking's Adaptive EDGE Architecture™ solutions, visit [www.hp.com/go/hpprocurve](http://www.hp.com/go/hpprocurve).

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