

# NOTHING BUT NET

The Houston Rockets bolster the network infrastructure at the Toyota Center for the 2013 NBA All-Star Game — and beyond.

## At a Glance

**COMPANY:** Houston Rockets

**EMPLOYEES:** 200 to 275, depending on the time of year

**TECHNOLOGY SUPPORT STAFF:** 2 full-time employees

**HISTORY:** The Houston Rockets organization is a professional basketball team in the National Basketball Association. Initially established in 1967, the team played its first four seasons in San Diego before moving to Houston in 1971. The organization, which plays its home games at the Toyota Center arena in downtown Houston, won two NBA championships — in 1994 and 1995.

The upgrade has made it much less stressful to troubleshoot network issues, says the Rockets' Okpara Young.



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When the Houston Rockets stepped up to host the NBA's 2013 All-Star Weekend, they couldn't afford any communications outages at the Toyota Center, the team's 9-year-old, 18,000-seat arena. Tens of millions of hoops fans would be tuning in live from around the globe, and even more following the festivities through social media and the web.

A celebrity-filled, three-day event, the All-Star Weekend was to feature high-flying antics in the slam dunk contest, a three-point shootout and the All-Star Game itself, featuring some of basketball's biggest stars: Kobe Bryant, LeBron James and Houston's own James Harden.

Network stability was a concern. The switches in the arena's wiring closets had reached their end of life, resulting in occasional network outages. To achieve high availability and reliability, the team's IT department decided to update the network with 50 new Cisco Systems switches two weeks before the All-Star tipoff, turning to CDW for an assist.

"We initially planned for more of an incremental rollout, but to make sure all aspects of the All-Star Game were covered, we decided to fast-forward the timeline,"

recalls Okpara Young, the Rockets' director of IT and telecommunications. "We had two weeks to install and configure the equipment. It's still a blur. We were in the office nonstop for a week and a half. It felt like one long day, but we got it done."

## The Right Teammate

Building a new network infrastructure two weeks before an All-Star Game is not an optimal strategy, but CDW delivered 50 switches and helped the Rockets install the equipment with time to spare.

"We've worked with CDW for a few years now, and one of the reasons we continue to work with them is that they are very professional and very attentive and responsive to our needs," Young says. "We had a short timeframe to get prepared for the All-Star Game, and CDW showed again that they could meet our needs. It was a challenge, and they did phenomenal work."

Young has purchased a mix of hardware and software from CDW over the past few years, including servers, computers, printers, uninterruptible power supply systems for the data center and a Microsoft Exchange Server software upgrade.

"When Okpara comes upon a project, he reaches out to me, and I engage the appropriate resources," says CDW Senior Account Executive Brian Huber. "That may be our local team of solution architects here in Houston, or it may be product specialists and our inside solution architects in Chicago. We collaborate with the Rockets team to design a solution to meet the business objective, with a focus on the impact to the fan experience."

For the recent network upgrade, CDW Solution Architect Nadeem Ahmed met with Young to discuss the team's needs and scope out potential hardware and services. Ultimately, the Rockets ordered 24-port and 48-port Cisco Catalyst 2960S switches along with a services package that provided a CDW engineer onsite to help with the installation.

"Okpara knew the type of equipment he wanted to support the team's needs," Ahmed recalls. "We came in and helped educate him on the specifics of the hardware and what features were available. We matched his hardware requirements with his budget requirements."

CDW had the switches in stock and was able to fulfill the order immediately, says CDW Field Account Executive Mario Murillo.

CDW Senior Network Engineer Jignesh Desai worked shoulder to shoulder with Young and his team to install the network. Young says he was impressed that Desai made

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a follow-up visit two months after the All-Star Game, to make sure the network remained in good working order.

## Nothing but Net

The All-Star events went smoothly, with no technical difficulties. The NBA West team beat the East 143–138 in the All-Star Game. And now, the Rockets organization has a blazing fast, highly reliable network that will provide ample bandwidth for years to come.

Every department in the Rockets organization relies on the network — from ticket sales, marketing and administrative staff to the team's coaches, who review game footage, and scouts, who evaluate talent and future opponents. The team's concessions staff and scoreboard operations staff, who stream live game footage and other content to a new state-of-the-art scoreboard and new high-definition televisions throughout the arena, use their own separate networks, but a portion of their network traffic also travels across the main network, Young says.

With the new network infrastructure in place, the team is well positioned to adopt new bandwidth-intensive technologies in the future. Possibilities include a Voice over IP phone system and an IP television system to improve the delivery of video content to more than 400 HDTVs in the arena's suites and concourse areas.

In the meantime, the Rockets are reaping the benefits of a more stable and secure network that is easier to manage and troubleshoot. Networking features built into the new switches allow the IT staff to drill down and pinpoint problems much more easily.

"Managing the equipment has been like night and day. That's the greatest benefit from the upgrade," Young says. "Now, we can get more reliable information from the equipment, so it's a lot less stressful to troubleshoot any potential issues."

## Alley-Oop Opportunities

Over the past few years, the Rockets organization has taken a phased approach to overhauling its network — beginning with a 2011 upgrade of the core, replacing an 8-year-old, gigabit-speed switch with a new Cisco Nexus 7000-series 10 Gigabit Ethernet switch. Young says standardizing on Cisco was an easy decision because of its innovative technology.

The team's previous networking gear was purchased from a network equipment maker that later filed for bankruptcy. "Our older technology was no longer supported, so having something new was going to be a huge boon for us," he says.

## Rockets Boost Fan Experience Too

During the 2012 offseason, the Houston Rockets spent big money on new players to improve the team. Then the organization invested more dollars on new technology to improve the fan experience at its basketball arena. The highlight: a huge, high-definition video scoreboard that's the largest indoor, center-hung scoreboard in the country.

During games, the team shows a live feed on the new video board, so fans sitting at the club level and upper deck of the Toyota Center can get a clear view of the play, says Joe Abercrombie, the team's senior production manager and producer.

"It brings fans closer to the game," Abercrombie says. "We cut shots that are close-ups of players, so people can really see what is going down in the paint. We show replays, so fans can see if the ball did go out of bounds."

The new video scoreboard, which debuted in early November, has four screens: two 25-by-58-foot screens facing the west and east seating areas and two 25-by-25-foot screens facing the north and south ends of the arena, says Doug Swan, director of scoreboard operations. The team also upgraded all of the technology in its video control room, including new networking equipment, new switches, video decks and clip servers, Swan says.

Besides the video board, the team also replaced its old CRT TVs with more than 400 new HDTVs in the arena's suites, lower and upper concourses and in the lounge areas.

The Rockets, who made the playoffs this year for the first time in three seasons, also installed a new point-of-sale system to speed transactions at the concession stands, as well as a new Wi-Fi network for fans to surf from their smartphones and tablets. "Overall, it's a better experience for fans," Abercrombie says.

When Young first turned to CDW for advice on new networking equipment, CDW recommended Cisco's latest Nexus switch and he was sold.

"It didn't take too much convincing to go with Cisco as our backbone," he says. The Nexus 7000-series switch offers the Rockets the flexibility the organization needs, including a new virtualization feature that lets the IT department create multiple virtual networks for the arena.

Specifically, the Nexus switch supports a technology that Cisco calls "virtual device contexts," which enable an IT organization to partition one network into multiple secure networks, each of which are separately configured and managed, Desai says. In February, Desai upgraded the software on the Rockets' Cisco Nexus switch and installed a license to allow the team to implement virtual switches. The technology makes it possible for the team to isolate its internal network from the networking needs of the arena's other event users, such as concert providers, a professional wrestling organization and a minor-league hockey team, Young says.

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“It lets us run several parallel networks on our backbone. We have our own internal network, and anything that comes through our doors that is not Rockets-related has its own separate network,” he says. “In essence, it’s a blank network that can be customized to their needs.”

That, in turn, bolsters security and ensures good quality of service, Young adds. “It does not compromise our network or the bandwidth available for the team.”

## Preparing for the All-Stars

The two-person Rockets IT staff installed the 50 new edge switches with the help of CDW’s Desai. The group worked day and night to meet the two-week deadline before the All-Star Weekend, Desai says.

While Desai concentrated on designing the network, configuring the new switches and creating the network documentation, Young and his one full-time IT staffer performed the installation. The IT team replaced the old switches with the new ones at night to reduce downtime and minimize any disruption for team employees.

“I have a lot of respect for those guys, for the amount of hours they put in leading up to the All-Star Game,” Desai says. “They worked seven days a week, probably more than 15 hours a day. They are a very hardworking crew and very dedicated.”

The All-Star festivities were a huge success, with the Rockets and CDW completing the network upgrade with a few days to spare. Now, the team’s 200-plus employees are taking advantage of the stability and improved performance of the new network.

The new Cisco Catalyst 2960S switches have more intelligence built in, allowing Young to better monitor the health of the network. If an outage occurs, he can use a command-line interface to pinpoint the precise location and cause of the outage, such as a specific switch or even a network port in a wiring closet, he says.

The previous switches didn’t have those features, Young says. Before, if an employee couldn’t access applications, email or the Internet, the problem could be anything from the user’s computer, a network switch or a wider network or Internet service provider outage.

“Every small issue before was potentially critical. We didn’t know if it was an individual issue or a broader problem,” Young says. “The new Cisco switches give us visibility into the network, and now we don’t have to wonder if a switch has gone out. It just takes one potential problem out of the equation, so it’s a lot easier to troubleshoot.”

## Technology Game Plan

Once the All-Star Game was in the rear-view mirror, Young began tackling new technology projects that could take advantage of the souped-up network, such as cloud-based apps and services.

His team is also considering whether to implement VoIP, which would lower telephony costs and improve communications for employees. A VoIP platform with unified communications capabilities, such as the ability to instant-message, make voice calls and hold web and video conferences on employee computers, also is an option. The new Cisco switches have built-in Power over Ethernet, which could support IP-based phones on employees’ desks.

Young also will begin to explore the full capabilities of the Nexus switch, including its virtual switch technology.

The Nexus switch can serve as the foundation for the Cisco unified computing platform. With the unified computing architecture, the team can integrate servers, networked storage, networking equipment and virtualization software, which would simplify management and reduce the number of network adapters, switches and cabling needed.

“It was one of the selling points of Nexus,” Young says. “This offseason we want to test these features and look at how we can integrate the Nexus switch into the rest of the organization.”

Overall, the network no longer is an obstacle to improving technology throughout the arena.

“We are actively making sure that our technology is always at the forefront,” Young says. “We want to take advantage of any new innovations that are warranted. At the end of the day, it comes down to business needs and what works best for the fans.”

Phoebe Rourke-Ghabriel



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