

Business Class Switching and Wireless

Customer Profile:

The Bonnaroo Music and Arts Festival is a four-day, multi-stage camping festival held on a 700-acre farm in Manchester, Tennessee every June. Bonnaroo brings together some of the best musical performers in the world. The festival also features dozens of attractions, activities and performances. The 100-acre entertainment village buzzes around the clock with an arcade, cinema, silent disco, comedy club, theater performers, a beer festival, and a music technology village. Approximately 80,000 art, culture and music fans participate.

“The fact that the DWL-7700 AP’s are totally field-ready and totally hardened to the elements is crucial. It saves us a lot of energy because we don’t have to use enclosures. We can just mount the radio to the pole and be live.”

- Thomas Porter, head of onsite networking at Superfly Productions.



DES-3010PA - Managed 8-Port 10/100 PoE Switch + 1 Gigabit Port + 1 SFP Slot

- 5.6Gbps Switching capacity
- Bandwidth Control down to 64k
- PoE Power Management
- Secure Management through SSH, SSL, TACACS+ Authentication, and RADIUS

Bonnaroo Music Festival Launches “Instant Network” and Meets iPod Wi-Fi User Demands with Rugged, Energy-Saving D-Link® Networking Gear

The Challenge

When you put on the biggest, most popular festival in United States, there are some challenges. The Bonnaroo Festival is essentially an instant population of 80,000 that materializes over night. The site becomes the 6th largest city in Tennessee during the show. The instant population needs sewage, water, electricity, phones and Internet connectivity. The first workers arrive on-site in mid-May, and 10 days after that, there’s running water, office trailers, showers and, of course, Internet.

“There are a lot of people involved in putting the show on,” said Thomas Porter, head of onsite networking at Superfly Productions. Superfly Productions is the co-owner and co-producer (with AC Entertainment) of the festival. They oversee all talent booking, festival profit centers, creative programming, corporate partnerships, content distribution, media and public relations.

“Email and Internet access is crucial to all the administrators, staff and production staff who are actually building the site and coordinating the show,” said Porter. The artists also require Internet connections. “Their contracts specify life, décor, food and beverage needs as well as internet to insure they have the experience they want while onsite.”

The network design includes five different VLANs for different geographies on the site and wireless access for the concert-goers. The popularity of Apple’s iPhone (and similar devices) makes the public wireless portion of the network even more critical this year. “We’ll see a tremendous number of client associations this year just because of all the devices that are now Wi-Fi capable,” said Porter.



Bonnaroo brings together some of the best performers in rock and roll, along with dozens of artists in complementary styles such as jazz, Americana, hip-hop, electronica, and just about any contemporary music you can think of.

The remote environment also presents challenges. “This is essentially a construction site,” said Porter. “It’s harsh, dusty, wet and incredibly dirty. Terms like ‘agri networking’ or ‘farm networking’ have been used to describe it. This is a hayfield eleven months



Bonnaroo installed a mix of indoor and outdoor D-Link networking equipment to meet the demands of their trailer and farmland environment. They deployed ruggedized DWL-7700AP Wireless AG Outdoor AP/Bridges outside.

out of a year.” Power issues are also critical. There is no standard power on the site, so everything is provided by generators.

Bonnaroo needed a reliable, rugged and energy-efficient networking solution for building their “instant infrastructure.”

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DWL-7700AP
- Wireless AG Outdoor
AP/Bridge

- Diecast watertight housing with built-in heater and temperature sensor for harsh outdoor conditions
- Simultaneous 802.11a/g Connectivity
- Supports Integrated 802.3af Power over Ethernet
- Also Works as Wireless Distribution System (WDS) with Access Point, and WDS/Bridge (No AP Broadcasting)



DXS-3227P - 24-Port PoE Gigabit
Wireless-Ready Switch + (4) Combo
SFP Ports + (1) Fixed XFP Port + (2)
Optional 10-Gig Copper/Fiber Uplinks

- 'Wireless-ready' Switching for Seamless Roaming and Centralized AP Management
- 24 10/100/1000 Ports with 4 Combo SFP in 1RU Chassis
- Built-in XFP Interface and Optional 10-Gigabit Stacking/Uplinks
- Preconfigured ACLs Protect against Trojans, Worms, and More
- 24 Ports of 802.3af PoE

The Solution

Bonnaroo installed a mix of indoor and outdoor D-Link® networking equipment to meet the demands of their trailer and farmland environment. They deployed ruggedized DWL-7700AP Wireless AG Outdoor AP/Bridges outside.

"The 7700 is great," said Porter. "They're relatively affordable and they take a beating. When we take them down off the pole you wouldn't believe that they'd only been up there a week. The end connectors are very robust, very sturdy and stable... much more efficient than any other connector type. The fact that the 7700's are totally field-ready and totally hardened to the elements is really nice. It saves us a lot of energy because we don't have to use enclosures. We can just snail the radio off of a telephone pole."

Inside the trailers, Bonnaroo uses DWL-3200AP 802.11g Managed Access Points and DXS-3227P 24-Port PoE Gigabit Wireless-Ready Switches, which include Power over Ethernet (PoE). PoE equipment channels power over twisted pair wires in standard ethernet cabling, rendering electrical wiring obsolete for a variety of applications. The DXS-3227P includes four combo SFP ports, one fixed XFP port and two optional 10-Gig Copper/Fiber Uplinks. Bonnaroo is also using the DES-3010PA Managed 8-Port 10/100 PoE Switch, which includes one Gigabit port and one SFP slot.

Power generators are trucked in to provide power for the festival and infrastructure. "The fact that everything we're using, with the exception of switching, is all PoE-driven is very convenient, because getting power to a specific location is really a big pain," explained Porter.

"It's expensive at this point with fuel prices the way they are. We don't want to run more generators than we have to. Being able to plug in one device and have it power 20 trailers or 24 trailers is very helpful."

Easy, Rapid Installation

Networking set-up for the 2008 festival began when Porter arrived on site May 19th. The network is designed for simplicity, since their budget is small and it only has to last for a month. "It's simple by design and necessity," said Porter. "I'm a big believer in keeping things simple." As of May 28th, Porter's team installed 15 bridge links, 70 radios and all the networking gear inside the trailers. The core network was up and running two weeks ahead of the show kick-off on June 13th. The show runs from the 13th through the 15th.

iPhones Covered and Back House Operations Run Smooth

Superfly Productions has seen significant growth in wireless device associations at their concerts, so they planned for a similar trend at Bonnaroo. "We provide a specific amount of address space for DHCP," said Porter. "Lately, we've seen 85% of that utilized by on site associations. That's a huge, huge number of people just basically going online because they can with their iPhones. Historically, we'd see less than 100 people with laptops or Wi-Fi devices on the public sections of the network."

"It's a great benefit to provide wireless Internet to festival attendees," said Chad Issaq, head of corporate partnerships for Superfly Productions. "And our back of house operations would be severely compromised without the level of communication that we now enjoy thanks to partners like D-Link."