

Plenty Of Storage

Documenting Clapton and the heavyweights

By Linda Seid Frembes

The goal: record more than 10 hours of live programming from two stages at Eric Clapton's Crossroads Guitar Festival.

The challenge: getting it done with professional quality.

The recent three-day festival, held at the Cotton Bowl stadium in Dallas and headlined by an all-star concert featuring Clapton, ZZ Top, Carlos Santana, B.B. King among other heavyweights, proved to highlight a shift in technology and technique in the live recording genre.

The common refrain of "do it with a truck" (as in a specially equipped recording truck staffed by experi-

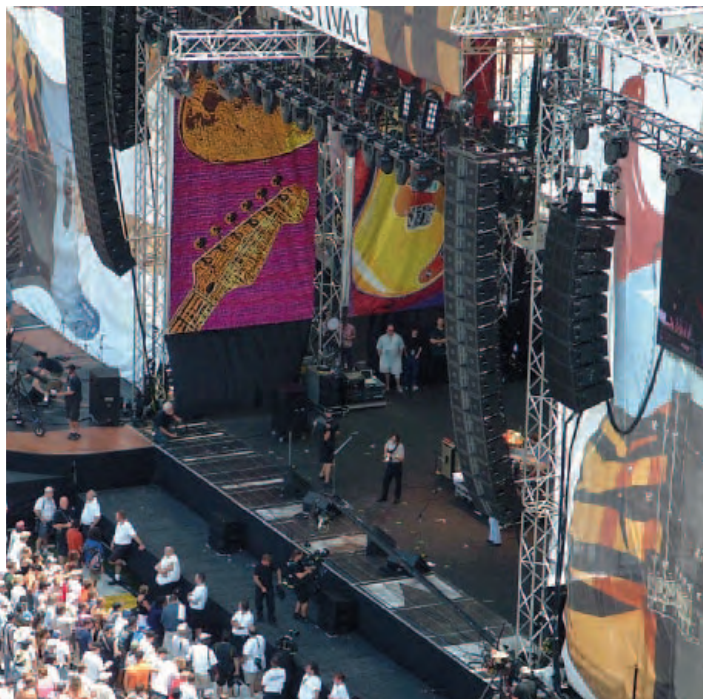
enced personnel) was heard, as it still is with many "mission critical" concert events. The caveat was that things would be done a bit differently.

Fred Maher, chief digital audio workstation (DAW) technician for the festival, headed up the project. Having performed beta testing on Studio Network Solutions (SNS) digital storage systems, Maher started by looking at the company's A/V SAN PRO, which facilitates multiple digital workstations concurrent access to centralized storage.

This technology began in the studio environment, primarily for recording and playing back large (Digidesign) Pro Tools DAW files from one digital drive. SNS developed new



The stage scene at Crossroads, where Fred Maher deployed dual SNS A/V SAN PRO to store more than 10 hours of live recorded program.



drivers for the fiber channel topology of a drive and combined it with proven enterprise storage technology.

"This technology has existed in the enterprise world but SNS has made it 'audio-centric' – large storage devices that work well for DAW production, especially in a live environment," notes Maher. Prior to the show, he tested the A/V SAN PRO for six to eight hours straight to make sure it would hold up to the real event.

PLENTY OF DATA

The two PCs used for the festival were 64-bit workstation-class computers running dual AMD Opteron processors, capable of providing plenty of data I/O (input/output). SNS supplied Maher with a four-user, 3.5 terabyte SAN PRO hard drive array. The SAN is cross-platform (Mac & Windows) and the SNS SanMP GUI software

forth on recording depending on the active stage.

Each stage and corresponding recording engineer was assigned to use specific drives to minimize bandwidth degradation. As a security measure, each user was also assigned user rights with password protection.

CLEAN AND DRY

The drives recorded the raw data signals coming from the stage via a splitter. This info is "clean and dry," and can go straight to tape, with mixing done later in the studio. The on-site recording engineers only had to push the button; it was up to the SAN PRO drives to be reliable and have enough storage.

According to Maher, the show was recorded on 48 channels in 24-bit audio at a 96 kHz sample rate for high resolution, DVD-A audio. The decision to record all 48 channels allowed the

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interface allows control of the arrays.

The SAN PRO was arranged in a RAID (Redundant Array of Independent Disks) 5 array, consisting of 15 drives per array and weighing in at 280 pounds per rack. Using the RAID 5 format, there is constant backup of each drive onto another.

"This redundancy is particular to a RAID 5," explains Maher. "The format can be slow, but with the SAN PRO technology, it's fast enough to handle the information flow in a live environment. There are also several 'fail-safes' built-in to the system like the constant backup of hard drive directories to prevent information loss. If you're in the middle of a live recording, you can pull out one drive from the array without any interruptions in recording."

With a recording truck stationed at both stages, Maher used a SAN PRO array at each location. The two separate trucks would switch back and

recording engineers not to worry about what was happening onstage. The artist could play whatever they wanted, be it solo acoustic or full band.

"In the studio, the SNS drives are crucial to playback performance. In general, recording is easier on the drive because the hard drive is in control. Playback can be more difficult because it depends on the system," he says.

Maher is currently at his Los Angeles studio performing quality control on the festival's recorded audio, in preparation for mixing in New York with five-time Grammy winner Elliot Scheiner. The recording was sponsored and produced by WNET in New York, in conjunction with Warner Strategic Marketing, and will be used in a nationally televised pay-per-view broadcast and separate DVD. ■

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