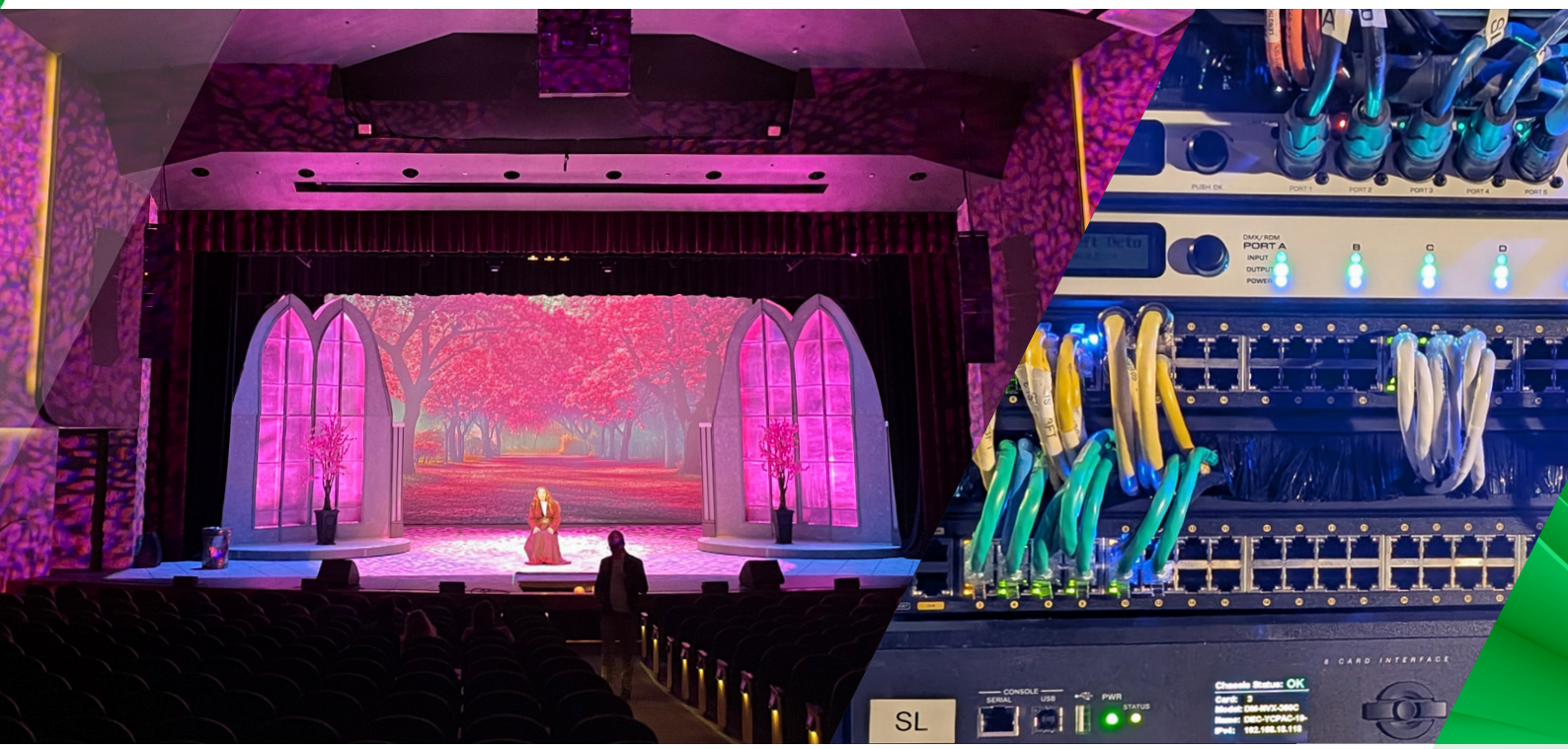


A new VLAN, and the show went on

How Yavapai College built a resilient production network that keeps performances running and makes complex AV easier to manage

When the house lights go down, every signal needs to arrive on cue. At Yavapai College's Jim & Linda Lee Performing Arts Center in Prescott, Arizona, a resilient and segmented production network now keeps audio, video, control, and communications moving reliably behind every performance.

Over four years, theatrical systems engineer and lighting designer Eric Tuthill transformed a shared, difficult-to-troubleshoot environment into a redundant AV infrastructure built around NETGEAR AV switches. The venue can now resolve issues faster, make changes without disrupting existing systems, and expand its production capabilities with confidence.

From shared risk to predictable performance

When Tuthill started, a busy day on the campus network could put a live production at risk. Video, communications, architectural lighting, lobby audio, cinema surround sound, WiFi, and internet traffic all shared Yavapai College's general backbone. Heavy network activity could affect every connected system, while multiple clocking sources made performance less predictable.

The theatrical lighting and audio networks were separate, but the audio environment remained unreliable. Devices could disappear without warning, and the redundant systems intended to keep productions running had never been fully tested.

JIM & LINDA LEE PERFORMING ARTS CENTER

"NETGEAR chose us with that one. If you go to Crestron and say, 'I want a switch that goes with this', they recommend using a NETGEAR switch."

Eric Tuthill, theatrical systems engineer and lighting designer
Yavapai College and J&LLPAC

Tuthill's priority was clear: isolate critical production traffic, reduce the impact of problems elsewhere on campus, and create a dependable fallback if part of the network failed.

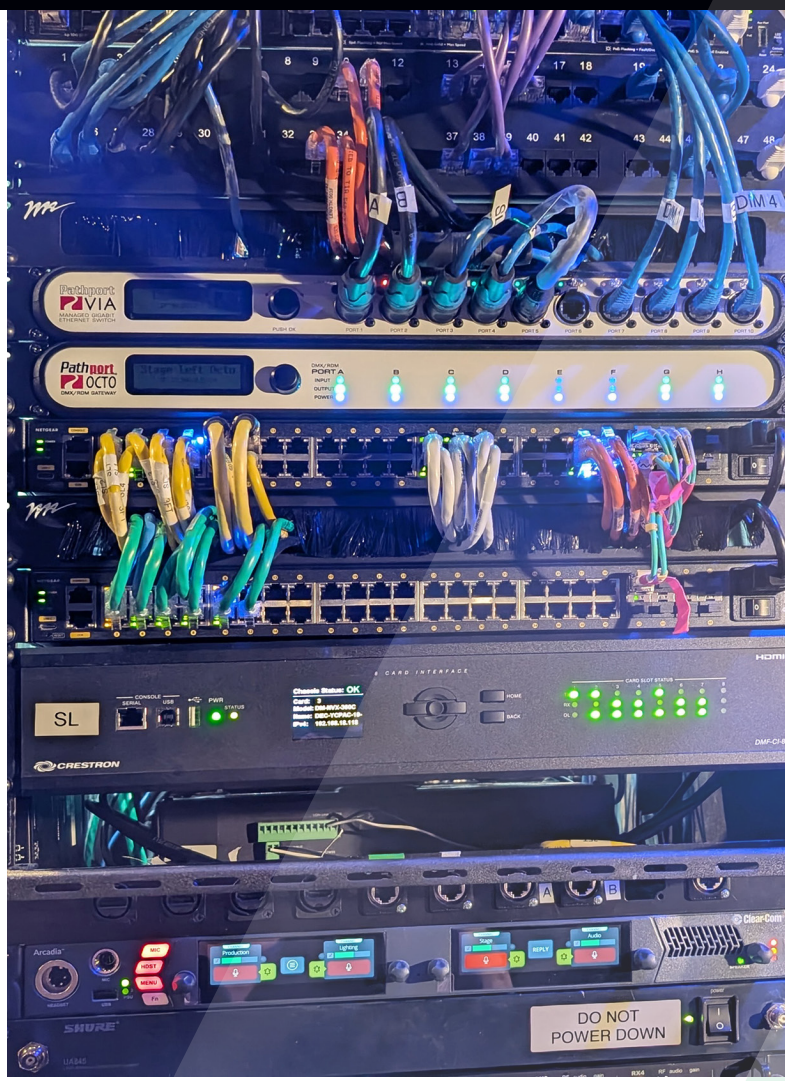
He began by moving the venues all-Dante audio environment onto NETGEAR AV Line switches he could trust. From there, he segmented every other traffic type onto its own VLAN too: Dante primary and secondary, Crestron NVX video, separate Q-LAN VLANs for the lobby zones and the cinema system's surround sound, comms, and more. Each one is walled off, with no path to the internet and no path to any other VLAN on the network. When the venue's Crestron control system came up for its own replacement, Crestron recommended NETGEAR switches for its NVX deployments. That order added four more switches, and three more have joined since, bringing the venue to ten NETGEAR AV switches carrying audio, video, and control.

Redundancy that protects the performance

Every switch is paired for redundancy. The primary audio backbone also runs over dedicated fiber with its own power supply, keeping it entirely separate from the rest of the infrastructure.

The main control room anchors the system, stage left carries the wireless microphone network, and coverage now reaches into nearby offices as well. When Tuthill pushes a firmware update, he moves through one paired set at a time, so a show never loses the network it is running on.

This approach gives the venue a practical safety net. Maintenance can happen with less risk, failures can be contained, and critical systems have an alternative path when something goes wrong.



When the clock had to be perfect

A clocking issue gave Tuthill his first real test of NETGEAR's support. He needed to synchronize clocking across three switches, a job complicated by a Dolby audio card throwing off unrelated readings elsewhere in the signal chain. With a show 72 hours away, he called NETGEAR's Pro AV support team. They walked him through why transparent clocking mattered, what it controlled, and how to avoid the same issue next time.

A similar pattern played out earlier, during a rollout, when a device-reservation limit capped out around 55 addresses on a network carrying more than 60 devices. NETGEAR's Pro AV team traced the limit and shipped a firmware fix fast enough that it barely registered as a setback.

The network's redundancy held up during the venue's annual film festival. Front-of-house speaker audio, routed through the venue's Q-SYS system, traveled from the control room, five flights above the stage, down to a room two flights below, over a path that spanned three hops of existing network equipment on the college backbone. A failing transceiver on that path was still passing traffic, just badly, and partway through the show it started throwing off the clocking on the front speakers.

Tuthill worked fast: new cable to a NETGEAR M4250 AV Line switch already in the rack, a new VLAN in NETGEAR Engage, ports assigned. Cabling included, the whole fix took about 20 minutes.

"Using the NETGEAR AV Line M4250, I was able to bypass a network path with a failing transceiver entirely and get the speakers running with perfect clocking."

Eric Tuthill, theatrical systems engineer and lighting designer
Yavapai College and J&LLPAC

Built to be glanced at, not decoded

Tuthill runs the whole system through NETGEAR Engage. Setting up VLANs for the Crestron video network, work he expects would mean a job that would mean digging through documentation on other platforms, takes him about five minutes: assign the ports, set the IP scheme, done. If something is wrong, he can see it and fix it just as fast.

None of it runs on Tuthill alone. He credits technical director Luke Thesing, stage supervisor Billy Koch, and audio engineer Scott Burke with keeping the day-to-day production running, and stagehand Moises Hurtado with the control-room rack cleanup pictured here.

Next, the venue plans to add NETGEAR wireless access points for a new management VLAN and bring its Clear-Com communications system into the same NETGEAR Engage environment. The network no longer demands the spotlight. It provides the reliable foundation that lets every performance take it.

The network at a glance

- NETGEAR M4250 AV Line switches
- NETGEAR Engage





"I'm using NETGEAR Engage, and I'm not even touching the CLI. Keeping it simple is the strategy, and it works."

Eric Tuthill, theatrical systems engineer and lighting designer, Yavapai College and J&LLPAC

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