SDVoE delivers 4K video across three-million-square-foot "American Dream" retail space

American Dream is a unique, expansive retail and entertainment complex nestled outside of New York City. The three-million-square-foot mall features an array of entertainment, including the Nickelodeon Universe theme park, Big Snow American Dream ski slopes, a 25,000-square foot "City Under the Sea"-themed aquarium and the DreamWorks Water Park. The ultimate luxury destination, The Avenue, features an array of luxury shops, including Hermes, Tiffany & Co. and many others. The complex, which has been 18 years in the making, boasts high ceilings, gigantic windows, luxe-yet-modern aesthetics and cutting-edge technology to create an immersive entertainment experience.

Challenge

Designed and constructed to be a destination mall, American Dream takes entertainment, dining, and retail to a new level, built on a foundation of interactive and immersive audio and video.

"The video display on the grand staircase had to look fantastic. It's a 'wow' factor for the complex," said Pierre Sicard, SDVoE Alliance member development representative. "The challenge was taking the video signal and transporting it throughout the complex while preserving the image quality. Transporting video is simple nowadays but preserving the quality of the image can be quite challenging. Oftentimes, it means sacrificing something in a video display, which typically means compressing the video to deliver it more efficiently, but at the expense of below average image quality.

Sicard added, "Another concern in video distribution is latency. There are many variants in AV-over-IP technology, but they often suffer from latency concerns. For example, if you're displaying a live event, it's not acceptable to have a choppy image. The quality must be pristine, which requires an extremely low-latency video solution."
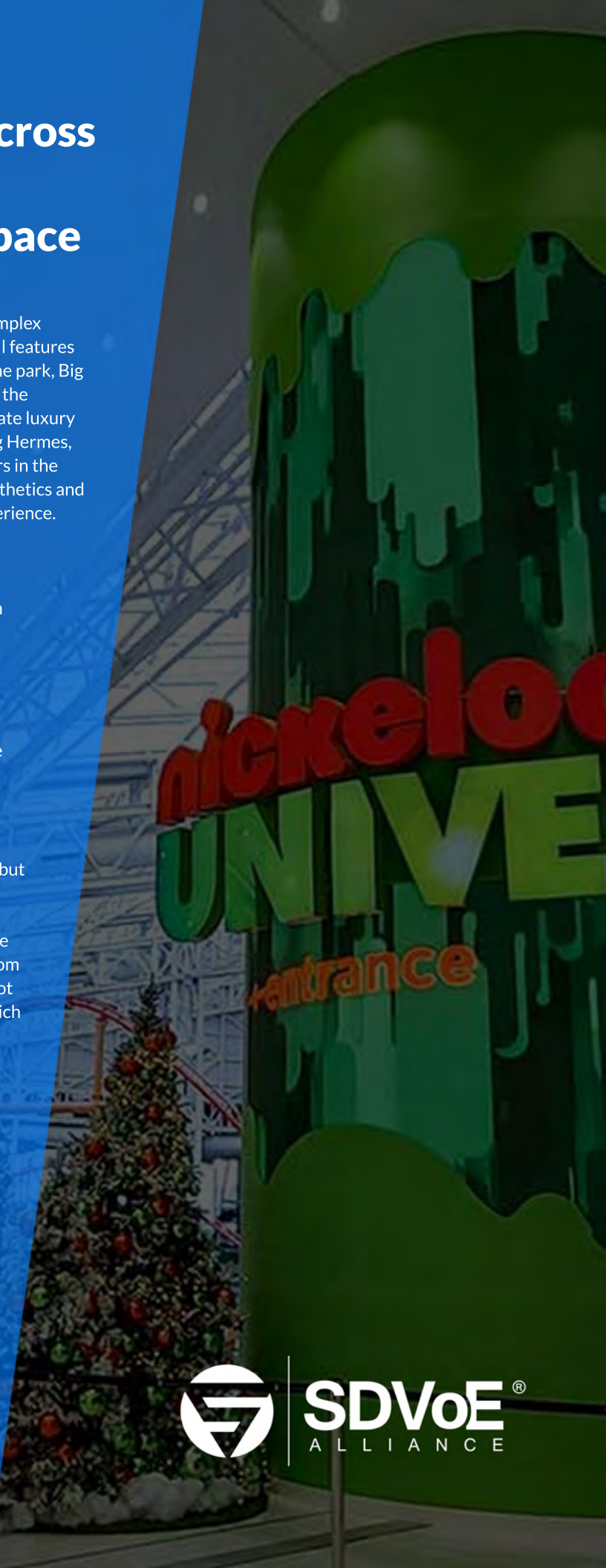
Solution

Software Defined Video over Ethernet (SDVoE) was selected to drive content to more than 200 displays throughout the complex in collaboration with NETGEAR, Aurora Multimedia and SNA Displays. The high bandwidth offered by SDVoE technology is integral in supporting over 600 endpoints, and is therefore a key component to provide a seamless solution.

"SDVoE's technology eliminates the need for compromise. It allows the transport of high-quality images anywhere within a complex or facility with virtually zero latency, and not a lot of technologies can effectively and successfully do that," continued Sicard.

As a result of the combined effort, delivering a high-quality audio and video experience at American Dream was made possible. Together, NETGEAR and Aurora Multimedia powered 40,000 square feet of display technology. SNA Displays supplied all LED displays, including the Grand Staircase, which is 12 feet tall and 107 feet long or approximately the size of two and a half highway billboards, and a traffic-facing exterior corner-wrap display measuring 24 feet high by 165 feet long.

NETGEAR's M4500 Series was selected to facilitate and power the connectivity between Aurora Multimedia endpoints and the video displays. The M4500 Series enables instant multicast functionality for AV-over-IP technology. "NETGEAR is the backbone for connectivity at American Dream," noted John Henkel, professional AV product marketing manager for NETGEAR. "Featuring high-capacity for AV-over-IP, the M4500 Series supports up to 640 SDVoE endpoints. It creates a cost-effective solution for 100 gigabit aggregation and 10 gigabit access layers, an integral technology component throughout the complex."

Sicard added, "NETGEAR has a long-standing, reliable history in the professional AV market. Its technology has always been cutting-edge and innovative, but it provides a unique value-add because of its investment in pro AV and supporting these installations. NETGEAR emphasizes customer and technical support, which is integral in any project, but certainly in a project of this size."

Aurora Multimedia played a critical role in transporting video throughout the complex. Aurora Multimedia's ground-breaking IPX-TC3-PRO SDVoE streaming product was essential to the installation. The IPX-TC3-PRO is the industry's first 4K2K transceiver with zero compression and latency. "Aurora's IPX-TC3-PRO is a key solution for the American Dream project," said Paul Harris, chief executive officer for Aurora Multimedia. "It allows 4K60 4:4:4 content to be distributed throughout the entire complex to the kiosks and LED walls. It even handles the USB and 1G Ethernet over the same fiber cable to each location making the IPX Series the ultimate AV IP product on the market today."

SDVoE technology, as implemented through the NETGEAR, Aurora Multimedia and SNA Display products allowed for full high-quality 4K60P and 4:4:4 video with near-zero latency across all displays throughout the facility — from impressive LED walls to hundreds of digital signage kiosks — to create an immersive entertainment experience.

Benefits of SDVoE Technology

SDVoE reaches beyond existing standards to provide benefits no other technology can claim:

- A complete ecosystem – SDVoE Alliance members are manufacturers with expertise in signal distribution, display manufacture, IT infrastructure, chip design and AV software. The integrator has dozens of partners to align with and products to choose from.
- A flexible yet simple software platform – the SDVoE API allows rapid development of highly specialized software, custom-tailored to the needs of a vast array of end users.
- A full OSI stack solution – only SDVoE offers the simplicity of a complete top to bottom solution, fully encompassing infrastructure, transport, processing, and a simple control layer.

About NETGEAR

NETGEAR is a steering member of the SDVoE Alliance. NETGEAR® (NASDAQ: NTGR) has pioneered advanced networking technologies for homes, businesses, and service providers around the world since 1996 and leads the industry with a broad range of award winning products designed to simplify and improve people's lives. By enabling people to collaborate and connect to a world of information and entertainment, NETGEAR is dedicated to delivering innovative and advanced connected solutions ranging from mobile and cloud-based services for enhanced control and security, to smart networking products, video over Ethernet for Pro AV applications, easy-to-use WiFi solutions and performance gaming routers to enhance online game play.

For more information on NETGEAR, please visit www.netgear.com/proav.

About Aurora Multimedia

Aurora Multimedia is a steering member of the SDVoE Alliance. Founded in 1998, Aurora Multimedia manufactures products in our own facility in Morganville, New Jersey. Having an in-house production line gives us the flexibility to customize and innovate more quickly with better control over the manufacturing/quality process, and the ability to customize to meet end-user demands. We design and manufacture products for today's AV solutions, with integrators and their customers' budgets in mind, and we take pride in our products. That's why we offer a minimum three-year warranty on all products, and a five-year warranty on the IPX-TC3 Series, VLX-TC1-CF, HT Series, and RX Series.

Advanced AV processors with scaling, multi-image rotation, and dual/quad display processing only add to our highly adaptive, diversified product line. Aurora Multimedia provides solutions for a variety of global markets, including government, education, security, hospitality, corporate, and house of worship.

For more information on Aurora Multimedia, please visit auroramultimedia.com.

About SNA Displays

SNA Displays brings creative visions to life by building high-end digital displays as vivid and dynamic as the imagination. SNA Displays employs a team of SNAPros™—engineers, skilled project managers, systems experts, installation managers, and support staff—whose mission is total project satisfaction.

SNA Displays is headquartered in Times Square and has worked with clients to design and build some of the largest and most recognizable digital spectaculars in the world. Discover how Dreams Live Digitally® at snadisplays.com.