

Why Pica8?

- ➔ **Improved switch performance:**
Clean switching at scale for 4K and 8K audio and video streams
- ➔ **Reducing cable complexity:**
Reduce and replace SDI coaxial cables with standard Ethernet
- ➔ **Best price-performance:**
Use commodity white box hardware for content creation and content production networks
- ➔ **Investment protection:**
Disaggregated network hardware and software for ease of upgrades and ease of scaling



Broadcast Networks and the Impact of 4K and 8K UHD

The broadcast industry, and television companies specifically, are going through a technology-driven transition. Ultra-high-definition (UHD) video and the transition to live IP media are creating strain on their infrastructure. These companies have very specific and individualized needs for their media production networks.

Broadcast Networks

In the past, television-broadcasting companies built their production studios with SDI routers and coaxial cables, which was fine for the bandwidth, I/O, and switching requirements. However, with the advent of HD, 4K UHD, and 8K UHD video, the content is creating greater demands on the network. For live broadcasts in particular, there are strict requirements for network latency and convergence times. The network needs to be able to switch different high-bandwidth streams of live video content, and do so without compromising the end user experience.

The legacy SDI router infrastructure is struggling to keep up. These networks are too complex (especially from the sheer amount of cabling), slow, difficult to manage, and costly. It's impractical to keep building networks this way.

SDN and White Box Switching

The combination of white box switching and SDN technology are providing huge benefits to the broadcasting industry.

Ethernet switches have come a long way in terms of throughput. Today, customers can purchase a switch with 100Gbps interfaces built with off the shelf hardware. These devices can provide the throughput, and non-blocking capabilities needed to transition SDI-based router networks to IP, and do so in a cost-effective manner.

In addition, these switches can provide a faster way to converge and switch video streams at the production facilities by leveraging SDN technology. OpenFlow can map these streams to packet flows, and use policies to switch this traffic from port to port. This achieves greater speed and lower latency than traditional L2 and L3 protocols.

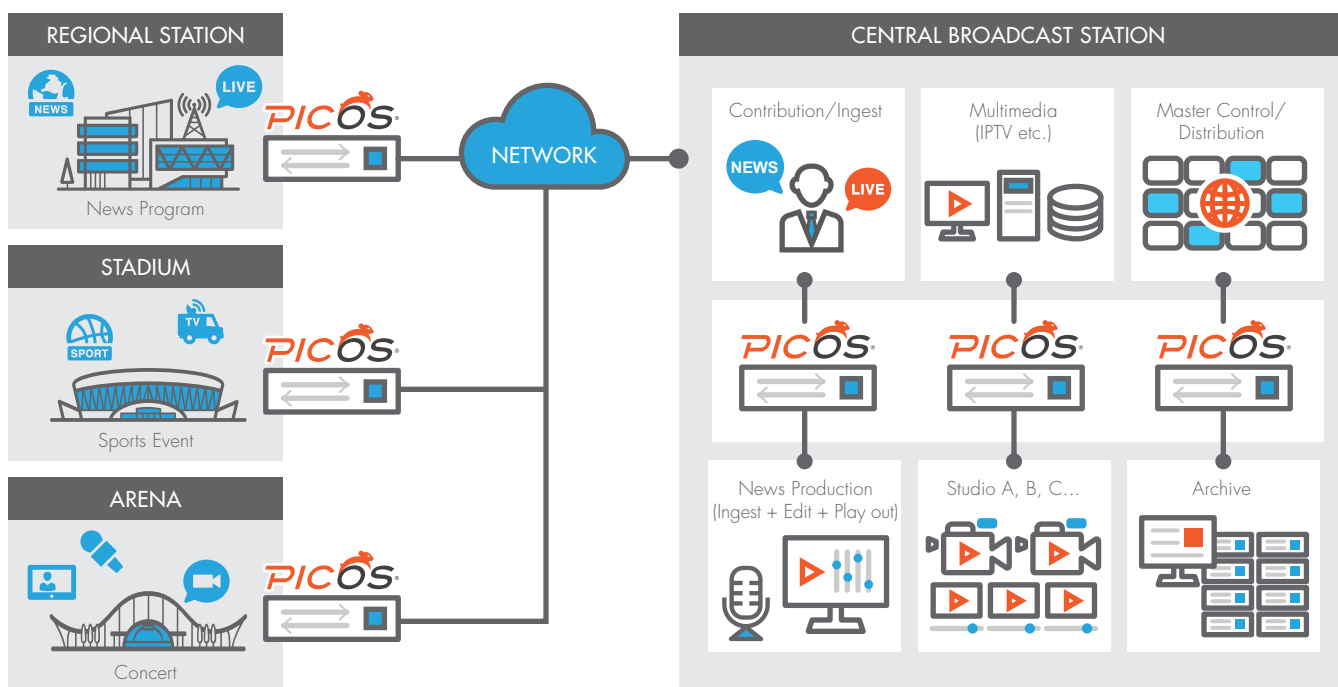
An SDN White Box Switch for Broadcast Networks

Pica8 provides an SDN white box switching solution to meet the requirements for broadcast networks today. Pica8's PicOS™ network operating system (NOS) runs on standard, commodity white box switches, and supports standards-based L2 and L3 protocols for seamless interoperability with existing IP-based television broadcast networks. PicOS also supports specialized protocols for broadcast networks, including the most robust implementation of OpenFlow in the market, which is the SDN protocol critical to handle the throughput and latency requirements for traffic flows associated with content production networks.

With Pica8, broadcast companies building networks for television can convert legacy SDI-based infrastructure to cost-effective Ethernet switches. Customers can choose from a variety of hardware platforms with different interface speeds and configurations. This has the benefit of simplifying their overall network, as these switches can interoperate with their existing IP devices today.

Also, with Pica8's unique CrossFlow capabilities, users can inject OpenFlow policies as needed to handle latency-sensitive video streams into different packet-based flows for greater performance. Television broadcast companies can achieve faster switching and greater network performance without having to re-learn and rebuild their basic IP networks.

Using Pica8 SDN White Box Switches for Broadcast Networks Platform



White Box Switch Support

- Support for 100G (50G/25G), 40G, 10G, and 1G interfaces
- Support for leading ASIC vendors for greater flexibility and programmability
- Partnerships with key white box ODM vendors for ease of procurement

Extensive and Robust OpenFlow Support

- OpenFlow version 1.4 through OVS 2.3
- CrossFlow capabilities to enable seamless integration of OpenFlow rules into L2 and L3 networks enabling granular QoS, security and scale.
- Innovative use of Table Type Patterns (TTP) to increase flow scale

Standards-based L2 and L3

- Interoperability – easily integrate Pica8 switches into existing IP-based networks
- Support for BGP, IGMP, multicast, QoS, security, and other services required for broadcast network traffic
- Supports scale-out network architectures for ease of scaling and capacity planning

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To learn more about this solution and how we can help your media network, contact us at sales@pica8.com.

