Case Study

Industry: Broadcast

German Public Television Station

Project: Upgrading servers and KVM systems.

The challenge

A public television station in Southern Germany was planning the construction of its broadcasting center. The station wanted to expand existing capacity by replacing old hardware. Servers and KVM systems were to be upgraded to DVI video and USB interfaces for extension and switching.

The servers are located in a central equipment room. Several directing and editing rooms are connected to the servers via CATx and fiber cables. The workstations within the directing suites are equipped with one or two monitors. Some jobs also require a USB 2.0 connection for special input devices. The system needs to be controlled in real time and down to the BIOS level from the central equipment room via the KVM matrix switch. Additionally, the KVM system needs to work with an external matrix controller, which also handles automatically switching the broadcast signals.

The solution

The broadcast station required switching and extension flexibility, the ability for multiple users to collaborate in real time, instantaneous switching of HD video, and a workflow that would not be interrupted. The broadcast company chose the Black Box DKM FX platform to implement the requirements, with the 288-port matrix switch controlling the signals required by the application. Within the 288 ports, the matrix switch features freely scalable inputs and outputs, plus the ability to mix copper and fiber cabling.

Using DKM FX extenders, users' consoles, including multiple monitors and USB peripherals, are smoothly integrated into the KVM peripheral matrix switch system, which requires little space. The connections of the consoles and servers are, depending on the distance requirement by the building structure, transmitted via CATx or fiber, which has no effect on the signal quality, maintaining the same high level of resolution whatever distances or media are used. The final application includes 150 to 160 servers and 120 to 130 user consoles being freely connected and switched over the DKM FX platform.

The compilation of the servers for the individual directing rooms is nearly the same. This simplifies disaster recovery in an emergency. With assistance of the DKM FX and an external controller, all servers can be switched all together to another directing room, where users can then take over active control with no hesitation. Even directors don't experience any problems, as their front-end remains unchanged. Thus the automated studio operation is ensured with the greatest individual flexibility.

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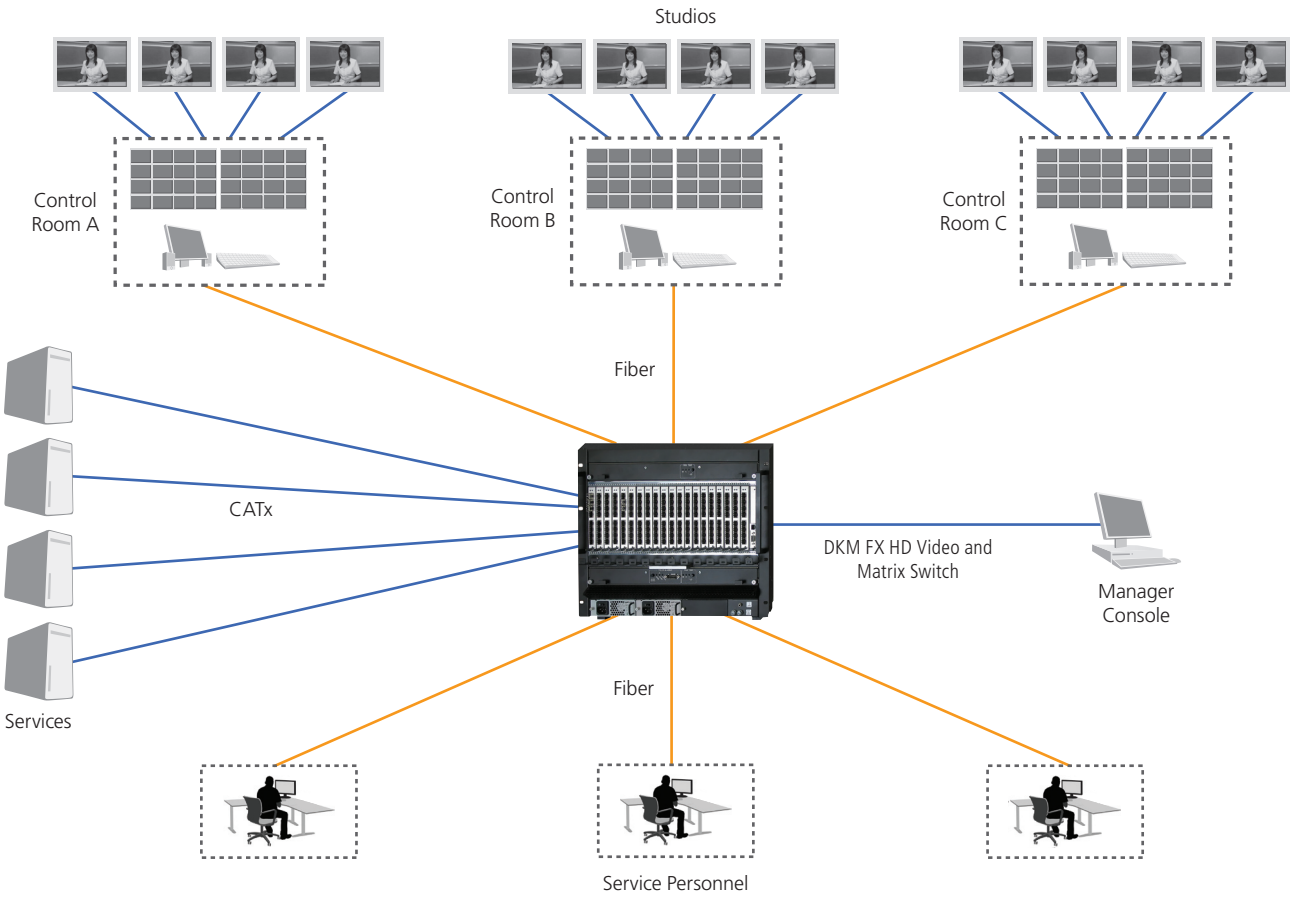
Application Diagram

User consoles and control room workstations are connected to the DKM matrix switch via fiber. The management console with Java utility and the CPUs are connected via CATx. Multiple users have simultaneous access, and groups are easily able to collaborate. In addition, if video or peripherals need to all be switched together, switching happens instantaneously, with no delay.