Ronni Guggenheim at IHS explores the evolution of KVM switch technology, with recent advances delivering instant switching, near-zero latency and lossless compression for a range of modern industrial applications.

The multitasking matrix

Ronni Guggenheim is Senior Vice President of Sales & Marketing at IHSE

FIGURE 1: The Draco tera provides instant switching

These devices have further evolved to offer a range of features and benefits that dramatically enhance users’ working procedures. In essence a KVM switch provides dynamic, changeable access between any user and any computer under the control of a central system management interface. There is no restriction on where the user is, so it is possible to create virtual work areas and even to create virtual computers. In the case of a post-production studio for example, identical studies have been built with similar consoles and dedicated machine control stations that can be connected to appropriate computers at the time of use, normally under pre-configured, stored conditions.

A production team simply selects the configuration that will connect them to the computers that run the editing and graphic programs they will be using, together with their stored video assets as and when they need them, all with instant switching and in real-time.

They are no longer restricted to a dedicated and unique studio - which frees up the studios for use by others and provides greater flexibility in location.

Transparent USB interfaces mean that dedicated control consoles can still be used within the studio, just as a locally-connected device would.

A typical KVM switch of this type is the new Draco tera range from German-based manufacturer IHSE. The chassis of these devices are available in two formats: Draco tera compact and Draco tera enterprise, catering for different sizes and numbers of ports to suit individual installations, from eight ports, through five stages to a massive 288 ports.

The system uses common plug-in input and output modules handling different formats, including analogue video and digital video via DVI in both single and dual link formats up to 2560 by 1600 pixels at 60Hz.

Bidirectional audio, serial data and USB, including HID and USB2.0, can be incorporated into the streams as necessary. Future formats, such as Displayport and Thunderbolt will be supported simply by the addition of a new version of input and output module, making the system totally future-proof.

The Draco tera provides instant switching, near-zero latency and lossless compression. This makes it ideal for video switching applications as well as data, a point that differentiates this type of KVM switch from the alternative KVM-over-IP type in which data is packetised and transmitted through standard network switches. This technology requires data compression and unfortunately introduces a level of delay and frame dropping.

To be fully usable and totally flexible a KVM switch must have a sophisticated control system allowing it to be managed and used to its utmost potential. This product range incorporates a choice of user interfaces that allow the switch to be controlled and monitored over an IP link with a Java GUI tool, using RS232 or by means of an in-built On-Screen Display interface.

It can be configured with centralised control and monitoring, as well as user-selected configuration so that users can select a stored configuration themselves and instantly respond to situations; critical in applications such as military and security command centres where delays of even a few seconds can cause a big difference.

KVM switches are an ideal and affordable means of interconnecting computers and consoles for a wide variety of applications. They are already used widely in many business sectors including broadcast and post-production, government, banking, air traffic control maritime and medical and are set to enter many others.

The convergence of digital video and data will undoubtedly create further opportunities for this category of enterprise level, high performance modular routing system in the future.

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