Technology briefing

Reliability and Resilience of Draco tera KVM Switches

Draco tera compact

8/16/32/48/64/80 ports

Draco tera enterprise

48/80/160/288 ports

Introduction

Draco tera KVM Matrix-Switches are used extensively in control rooms, broadcast studios, post-production suites, emergency control centres and other mission-critical environments.

A major requirement of equipment in these applications is that they should continue to operate continuously without adversely affecting the operation of the installation, even if a fault occurs within the equipment itself.

This calls for reliable, robust operation with the utmost resilience.

Draco tera Matrix-Switches are designed to meet these requirements to the greatest possible level and a number of features are incorporated in the design to achieve it. These include the following:

- Redundant power supplies and fans
- Hot swapping of boards and components
- Internal identification of faults and fault correction including visual indication
- Auto setup of CPU configuration and switch routes
- Auto reconfiguration of input and output ports
- Connections maintained in event of backplane failure
- System design considerations for maximum reliability

Draco tera units may be monitored and managed remotely using Simple Network Management Protocol (SNMP). This allows the system to be continuously monitored for rapid detection of faults and allowing fast rectification to be undertaken.

Purpose of this document

This Technology Briefing describes the features that are incorporated within the Draco tera and procedures that ensure the absolute minimum 'down-time' of data and video networks built around the device.

Users should refer to the Draco tera user manual for up-to-date information and detailed instructions on the setup and operation of these features.

Overview of features

Dual-redundant power supplies

All Draco teraKVM Matrix-Switches are capable of operating with one, two or three (tera 160 and 288 only) power supplies. With two power supplies in dual-redundant mode both power supplies operate and share the load, in order to extend their operational lifetime. However should one supply fail, the other will provide all required power, thus preventing system shut down and ensuring continued operation.

The power supplies are monitored and controlled by the CPU boardwhich will close down one supply and switch to the remaining one in the event of failure.

Hot swapping of boards and components

All plug-in circuit boards, including CPU and all types of I/O boards (Fibre, Cat X and Coax) may be removed and replaced without shutting down the matrix switch.

Other system components including power supplies and fans are also hot-swappable and may also be replaced without shutting down the matrix.

Internal identification of faults and fault correction including visual indication

The status of the CPU board and matrix backplane is monitored internally by the I/O cards. If a fault is detected the switch will fall back to a 'Local Switch Mode'. In this mode a reduced on-screen display functionality is maintained with individual I/O boards showing their connections. Limited reconnection between inputs and outputs within each board are possible.

All boards and devices have extensive visual indication, allowing defective units to be quickly and easily identified.

Auto-setup of CPU configuration and switch routes

All parameters and configuration settings required by the CPU board are stored on all I/O boards. This means that data is not lost should a CPU card fail. When replaced, the CPU board recovers configuration settings from the I/O cards and returns to the full, last operational system state within three minutes of replacement.

Auto reconfiguration of input and output ports

The system stores and keeps track of input and output configurations of the I/O boards. Should an I/O board be replaced, it is automatically reconfigured to the operational state of the previous board.

System design considerations for maximum reliability

In addition, the system may be configured with additional redundancy to provide backup routes for even greater levels of operational reliability.

To ensure the highest possible level of operational reliability, well-known techniques of mirroring, double connection and backup should be considered. System design to this level is normally undertaken by the system integrator, familiar with the operational functionality of the Draco tera switch.

An SNMP trap may be employed to automatically set up a disaster configuration should a fault in the operation of the unit be detected.

Redundant extender ports

Draco vario extender units used with the Draco tera switch are also available with redundant ports. These allow simultaneous connection to two switches. Should one switch fail, the other can operate as a backup.
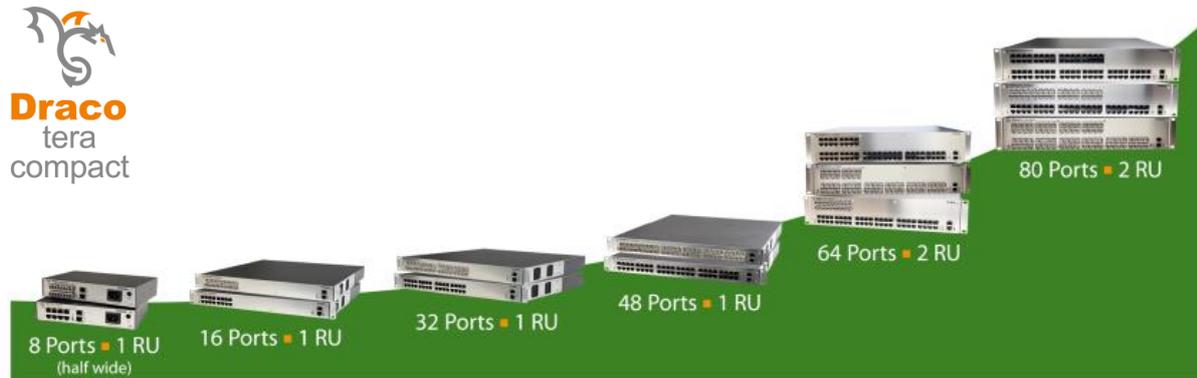
The Draco tera range

The highly successful Draco tera family has opened a new chapter in the world of enterprise-scale digital video and matrix switching of up to 288 ports in a single system. Based on well-established multiple Gigabit technology, Draco tera enables a cost-effective, modular switching and extension solution supporting DVI video, together with USB, serial, and analogue or digital audio options. The Draco teraKVM switch is available in a range of formats to suit every application

All common DVI Single-Link resolutions are currently supported up to 2048 x 1152 pixels, including High-Definition 1080p. Support for even higher resolutions will be added as a future interface option. To enhance its application in broadcast and video editing environments the Dracotera also supports seamless switching of full-rate SDI video.

The Draco tera solution has been designed for the utmost level of performance and flexibility and to provide scalability for application and future growth. Its non-blocking, high-speed video switch delivers instant millisecond switching between sources and displays, making it ideal for mission-critical control room applications. It can handle the most complex KVM and video routing installations including demanding broadcast and post-production environments, allowing multiple studios and edit suites to access common equipment thereby delivering greater productivity and efficiency.

Draco
tera
compact

8 Ports • 1 RU (half wide)

16 Ports • 1 RU

32 Ports • 1 RU

48 Ports • 1 RU

64 Ports • 2 RU

80 Ports • 2 RU

Connections to source computers and display devices are made through CPU and Con Units. A wide variety of these units is available to support all common audio, video USB-HID and USB 2.0/3.0 signal types.

Please consult individual product brochures for detailed specifications.