BLACK BOX
NETWORK SERVICES

Global Centralized KVM Server Management

How to Achieve Cost-Efficient Data Center Growth While Keeping Your Existing Components

ServReach KVMCube | ServReach KVManager | ServReach KVMGate

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Summary

Enterprise server rooms and data centers are constantly expanding, but IT budgets and staff levels remain flat. Trying to reconcile these two contrary trends is a never-ending challenge. Although a strategy for centrally managing a global data center's infrastructure goes a long way towards reducing the logistical pressures on data center managers and IT administrators, the problem is such solutions force you to replace your existing KVM infrastructure with IP-enabled KVM devices that are the same brand as the management device. But secure, out-of-band, global centralized management doesn't have to be expensive or inconvenient. Black Box offers a unique, vendor-independent, global centralized management solution that works with your existing infrastructure. With a ServReach solution, you can effectively transform your IT management capabilities while keeping expenses low.

We're here to help! If you have any questions about your application, our products, or this white paper, contact Black Box Tech Support at **724-746-5500** or go to **blackbox.com** and click on "Talk to an Expert." You'll be live with one of our technical experts in less than 20 seconds.

Introduction

The advantages of KVM and Keyboard, video, and mouse over IP (KVMoIP) technologies are now widely recognized throughout the IT world, but the dynamic and increasingly complex nature of the enterprise environment has created a new set of challenges for effective data center management. In response to these challenges, data center managers and IT administrators are now using global centralized KVM server management systems.

This white paper first examines the developments confronting today's growing data centers, then highlights a number of practical obstacles hindering the successful transition to global centralized KVM server management. It discusses the importance of a global centralized KVM management system that leverages a data center's existing KVM infrastructure investment, meeting maximum data center management scalability and potential—and saving money.

Challenges facing today's data center managers and IT administrators

There are several developments within the corporate environment that are guiding data center managers and IT administrators to the acquisition of global centralized KVM management solutions. These factors are:

• Rising server growth

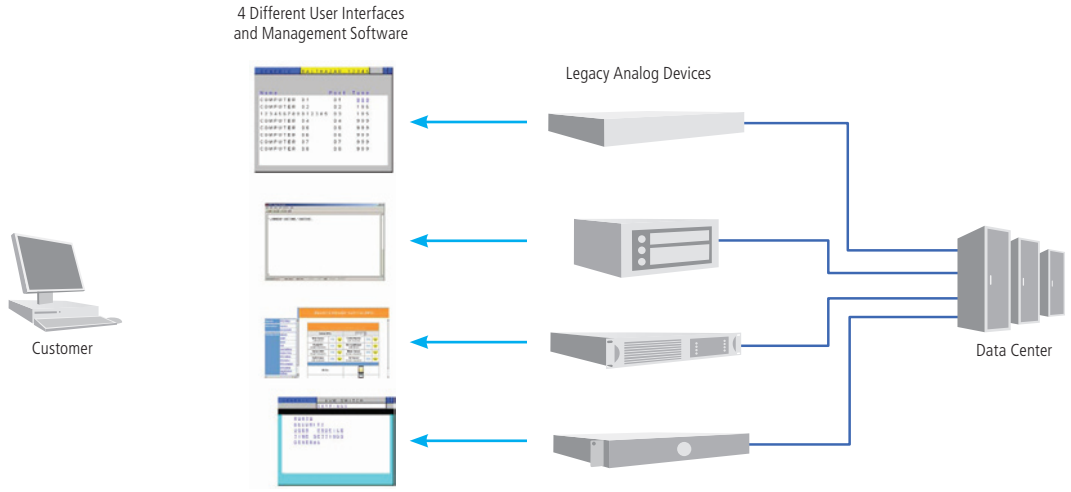
Data volumes and number of servers are doubling every year. Market analyst IDC predicts that while demand is slowing, the number of servers in the U.S. alone will grow to 4.9 million by 2009.

• Growing management complexity

Today's IT managers must operate in an environment of nearly unmanageable complexity. A typical server room features a host of server appliances including network switches and routers. Behind these is often a TCP/IP network in addition to any number of power devices and environmental sensors. Each of these systems is a world unto itself and has its own software clients and user access rights that must be maintained, with no simple means of information sharing or unified logging of user activity.

Figure 1 – The complexity of modern data center infrastructure management

This growing complexity means that IT personnel are increasingly limited in their ability to easily and quickly access the desired servers or devices.



Faster business, smaller world

The pace of today's business has reached unprecedented levels with corporations required to deliver 24/7 uptime and real-time access to mission-critical servers 365 days a year; and instant assimilation of new devices and IP addresses that accumulate daily. In addition, the barriers that formerly prevented companies from locating testing labs, lights-out centers, and branch offices in far-away locations are now gone, enabling corporations to take advantage of regional cost savings for power and cooling or remote labor markets. The result is more pressure on the IT administrator to keep remote data centers constantly available, even when they are halfway across the world.

IT budgets can't keep pace

IT budgets continue to be far outstripped by the demand for server growth, and this trend is predicted to continue in the coming years. Fully 57% of 200 enterprise IT decision makers surveyed by *Datamonitor* in Western Europe and the U.S. indicated that they see their IT budgets decreasing or remaining flat in 2009. In addition, as much as 70% of IT budgets today are dedicated just to keeping existing server room/data centers up and running.

The KVM advantage

Because of the increasing compromise between IT demands and resource availability, data center managers and IT administrators are now being forced to adapt and evolve. Keyboard/video/mouse (KVM) switches—both analog and IP—are already an integral part of a data center's infrastructure and go a long way towards easing these pressures. KVM's unique advantages are discussed below.

Eliminating repetitive hardware

KVM technology enables IT administrators to consolidate access and control to multiple servers and networked devices from a single keyboard, video, and mouse console workstation—eliminating unnecessary hardware duplication and making room for additional server room growth.

Out-of-band capability

Because KVM technology is hardware based, it has the advantage of out-of-band functionality, or redundancy, that comparable software-based systems, because of their reliance on the operating system, can't duplicate. A KVM IP system can maintain BIOS- level access and control of remote servers and devices even when the operating system is down—an invaluable backup system for the data center manager and IT administrator.

But the combination of increasing amounts of data and applications, the proliferation of servers, fewer resources, and greater business demands mean that data centers and server room managers are now struggling with increasing numbers of KVM switches. Just as a library with a bad index system is harder to navigate with an ever-growing number of books, a data center can't function efficiently or grow without an organized system that centrally manages the access, authorization, and configuration of these devices. Eventually, the acquisition of more KVM switches will lead to diminishing output and lower efficiency.

Global centralized KVM server management—and problems

A global centralized KVM management platform works by consolidating all company server access and devices via locally connected KVMoIP devices. This remote access hardware is then united under a single management appliance or software "umbrella" providing global, yet fully secure, out-of-band access and control.

Yet although a good centralized KVM management platform solves many of the inherent challenges of the modern server room/data center environment, there are problems that remain unsolved by the systems currently on the market.

It's a mixed-up world

The standard approach to global centralized KVM management says that the central management appliance or software can only manage KVMoIP switches or devices that are the same brand as the appliance or software. However, a typical IT department generally acquires new switches as the information storage and application requirements dictate. This means that over a number of years, a company may accumulate a mix of many different KVM switches and devices across the data center that are now suddenly incompatible with the management system the company wants to acquire. The typical management system vendor can then capitalize on the customer's perceived requirement for centralized management by forcing them to throw out their entire inventory of legacy KVM switches and devices.

Delayed ROI

Although the sale of a centralized management system provides excellent revenue for the vendor, it creates a major headache and expense for the data center manager struggling to maintain constant uptime and data availability under the pressure of tight budgets and limited manpower. The customer may be convinced of the justification for acquiring global centralized management in the long-term, but the cost of such extensive surgery to the data center infrastructure inevitably delays and reduces the customer's ROI.

If it isn't broke, then why fix it?

With each KVM switch costing anywhere between several hundred to even thousands of dollars, throwing away a very significant part of a customer's infrastructure investment makes little economic sense—especially when that investment could continue to work reliably for many years to come. To complicate matters, many legacy KVM switches are still being paid for, creating a logistical nightmare for the company CFO and forcing the question, "If it isn't broke, why fix it?".

Installation hassle and downtime

Removing working legacy KVM switches and replacing them with KVMoIP switches inevitably creates an installation hassle and leads to a period of server downtime. This means that data center managers and network administrators must now plan the scheduling of their system replacement. Few corporations in today's 24/7/365 business environment can afford the luxury of even a single hour of downtime.

But what if data center managers could acquire an out-of-band system that securely manages servers that are globally distributed, without the need to replace the entire inventory of legacy KVM devices? With the Black Box® ServReach™ KMVoIP System that solution is already a reality.

The Black Box solution

Black Box has a unique solution that doesn't involve replacing the company's entire KVM infrastructure. The ServReach KVManager is the Black Box global centralized KVM server management solution for the data center and enterprise server environment.

Black Box system engineers have analyzed virtually every KVM switch on the market and written a customized switch definition file for each. The result is that the ServReach KVMoIP System works seamlessly with more than 500 variations of analog KVM switches from a multitude of vendors and manufacturers. This delivers a unique set of benefits to the end-user:

Adds global centralized management without removing a single KVM switch

Because the ServReach is vendor independent, you don't need to replace the entire data center KVM infrastructure. ServReach simply grafts global centralized KVM management onto the existing up-and-running server room/data center, aligning with the third-party KVM switches already in place. This is done with the Black Box ServReach KVMGate—a KVMoIP gateway device designed to connect to each of the legacy KVM switches/devices to provide global centralized KVM management for a fraction of the cost of competitive systems, ensuring a faster and greater ROI.

Figure 2 – **Before**: A typical global centralized KVM server management installation requires you to replace your existing devices with expensive IP devices.

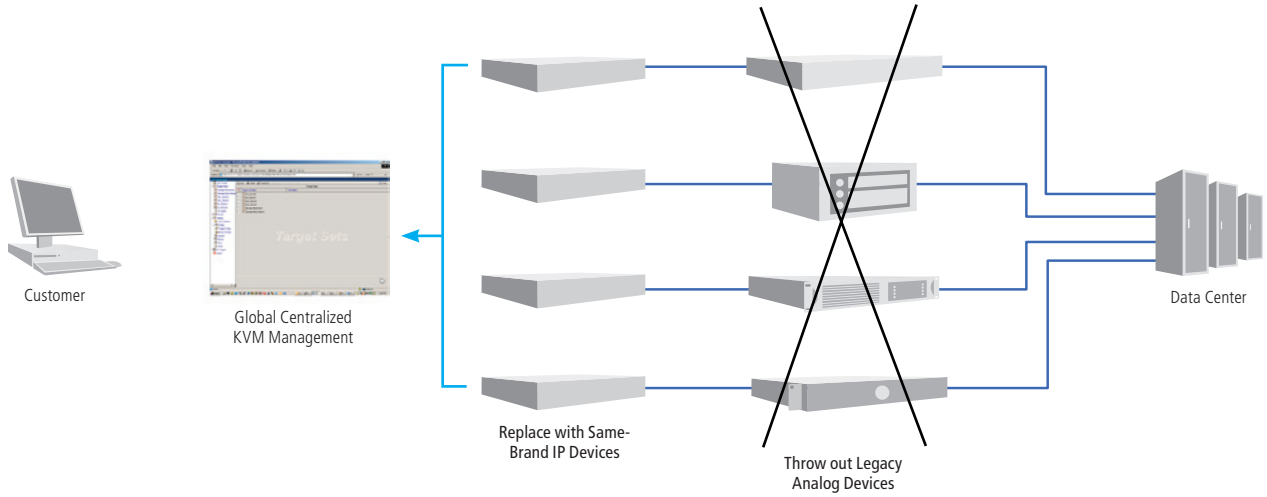
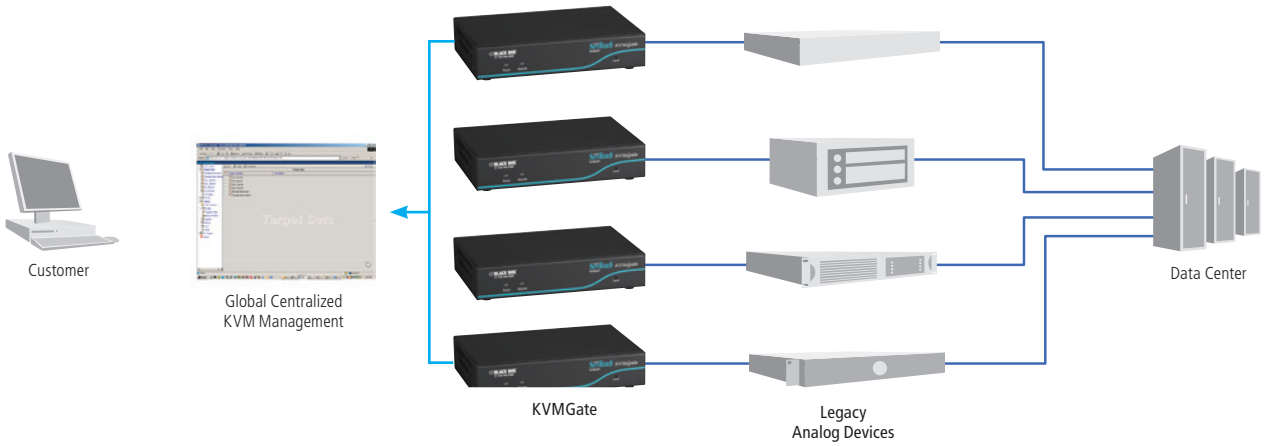


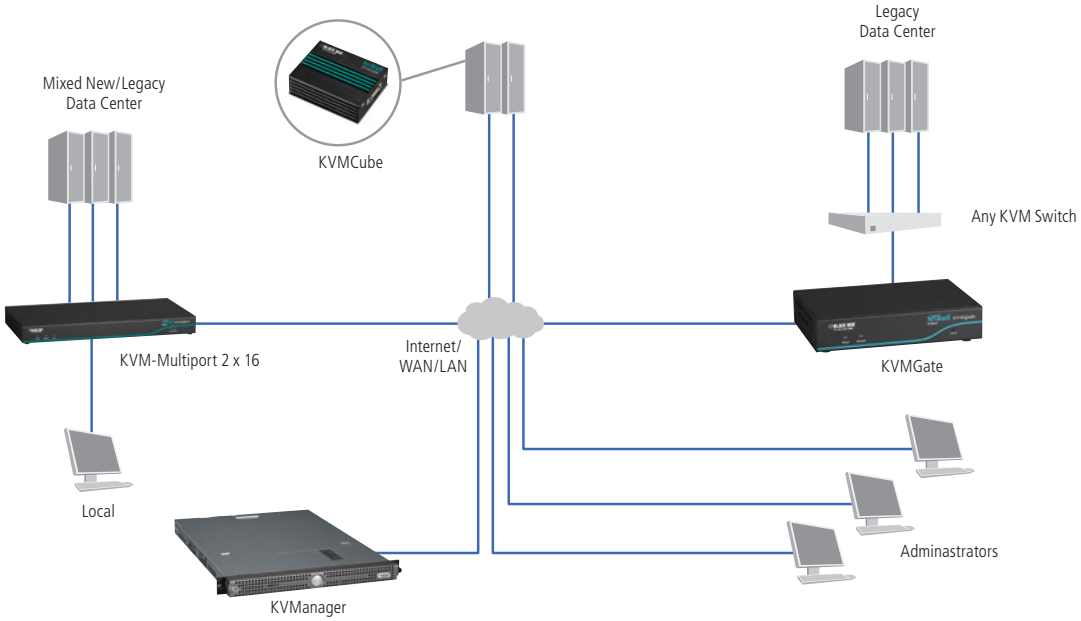
Figure 3 – **After**: Installation of the ServReach global centralized KVM server management system enables you to keep devices that are working for you.



Enables hassle-free expansion of the data center

If a company is planning on opening or acquiring a new data center or a large number of new servers, ServReach KVManager can provide any-by-any access via the ServReach KVMCube—a compact, rackmountable, digital matrix IP device that gives fully secure, non-blocking access for any of the users to any of the servers simultaneously. In addition, the servers controlled by legacy KVM switches via KVMGate can still be managed by the ServReach KVManager at the same time as the new servers controlled through a KVMoIP gateway. With all the servers under the same KVManager umbrella, data centers can now easily acquire new servers and devices without having to worry about how to incorporate the new infrastructure with the old.

Figure 4 – ServReach KVMoIP manages new, legacy, and mixed data center infrastructure at the same time.



Seamless business continuation

Being able to graft global centralized KVM management onto an existing up-and-running server room/data center means no downtime and no scheduling worries. In addition, the corporation isn't totally dependent on the vendor to complete the job on time, and doesn't have to worry about losing vital business.

IT administrator maintains the professional knowledge of the system he/she's built over the years

Even though most of the time the IT administrator will be managing the system through the KVManager graphical user interface (GUI), at critical moments when the IT administrator needs to perform an operation to the servers at the local level, he/she can still operate the legacy KVM consoles, leveraging the years of experience and specific knowledge of the native user interfaces.

Conclusion: Leverage your existing KVM investment for future growth

A global centralized KVM management solution that requires the disposal of multiple existing KVM switches provides little consolation for corporations that have invested years in acquiring their KVM devices and configuring their infrastructure, and is simply not an option in today's climate of stretched budgets and overburdened human resources.

The ServReach KVManager is the only solution on the market that can respond to the demands of real-world data centers and enterprise environments. A fully secure, out-of-band system with intuitive management capability and superior IP performance, the KVManager is designed to leverage your existing KVM investment and to provide a user-friendly base for new data center growth. Your company can now achieve global centralized KVM management while avoiding the "shackles" of one-vendor dependence—and its associated costs and installation hassle. KVManager ensures that you receive secure, BIOS-level access and control of your network infrastructure, wherever it may be in the world, at the best price and performance.

About Black Box

Black Box Network Services is your single source for KVM switching solutions as well as more than 118,000 video, voice, data, audio, networking, and infrastructure solutions. You'll find everything from cabling, cabinets and racks, testers, and environmental monitoring and control to digital signage, multimedia, and networking, all supported by free, live 24/7 Tech Support available in 20 seconds or less.