

# A Guide to IT Automation: Managing K-12 & Higher Ed IT Systems Effectively



TECH & LEARNING

  
**Kaseya**



# A Guide to IT Automation:

## Managing K-12 & Higher Ed IT Systems Effectively

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## Introduction

In these uncertain economic times, universities and K-12 school districts are looking to control costs wherever possible. Decision makers are looking at all expenditures, even those once considered mission critical to see where to cut costs and install greater efficiencies.

According to analysts, IT budget projections for the near future aren't too rosy: In a June 2008 *Network World* report, 44 percent of companies said they expect flat budgets, and with tax revenues at a low, states also are expecting cuts across the board, and school district budgets are affected.

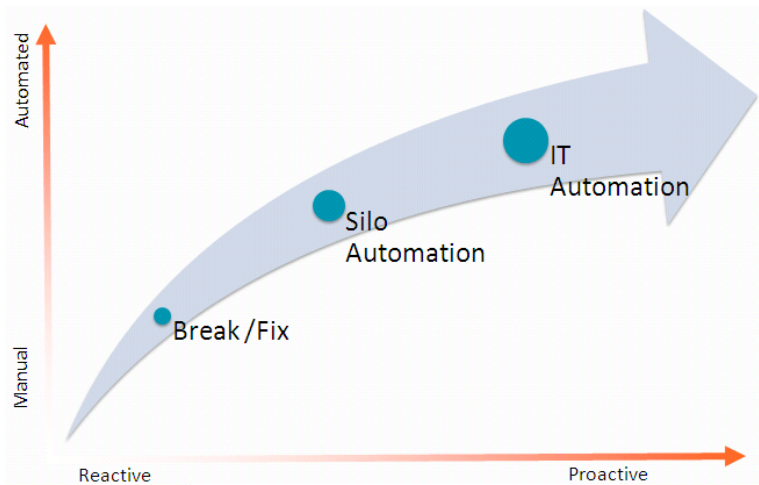
At the same time, IT departments are under more pressure than ever, thanks to increasing government requirements around data management, increasingly complex security threats, and increasing demand from management and end users for 24/7 uptime and high performance. The solutions for these issues are found in strategic investment in technologies that can boost efficiency, save money in the mid and long terms, and make IT an integral part of a district's business processes and goals.

IT automation—where software helps to manage the routine, day-to-day tasks of IT maintenance—can make the difference. As shown in **Figure 1**, a comprehensive IT automation solution can help IT professionals run the entire network smoothly from one central location to simplify delivery of IT services—saving time and money and making systems secure. By automating IT processes and delivering comprehensive remote support capabilities, and breaking free



from the outdated “break-fix” model, school districts can leverage all the benefits of automation and operate more efficiently, securely, and cost effectively every day.

Figure 1: IT Automation Management Curve



This ebook will guide you in the process of understanding IT automation, providing tips on how to evaluate the technology, and determining what the right solution for your district should include.

—Gwen Solomon, Web Editor



## What is IT Automation?

### Desktop Management Challenges

Managing systems efficiently and cost effectively is a challenge for all school districts. Higher fuel costs have made driving from school to school, especially where schools are located at a great distance from one another, to address IT problems, maintenance, and upgrades cost prohibitive. Higher equipment and personnel costs are leading to an increased focus on consolidation, virtualization, and automation for IT equipment. Schools are realizing that desktop management is a major cost center, with staff devoted to maintenance of the network and servers, and technical support personnel managing updates, patches, and break/fix issues for end users.

### IT Automation

IT automation -- where software helps to manage the routine, day-to-day tasks of IT maintenance remotely—delivers relief from the administration, monitoring, and helpdesk chores that take up so much IT time and budget. With automation in place, IT departments reap immediate time and staffing savings, not to mention reduced licensing fees for maintenance software. They often find that automation brings improvements in energy efficiency and security as well, which lowers data center costs.

### Survey of Management Issues

A recent ZiffDavis survey of IT professionals was designed to measure attitudes about IT automation and analyze IT



concerns as well as to explore to what extent IT automation has been adopted. It also evaluated the savings and return on investment that organizations realize when implementing automation solutions.

Figure 2: Common IT Systems Management Challenges



When asked about their biggest challenge, in terms of client systems management, nearly half of survey respondents cited “providing satisfactory service levels to end users.” It’s interesting that this seemingly basic expectation—that schools, staff, and students should have the tools and resources they need to do their jobs each day—has become a challenge for IT departments. Apparently, keeping applications and systems up and running isn’t as simple as it sounds.

Nearly tied for second place are controlling costs, which is a top concern for all school districts, and ensuring security and

compliance. School district systems represent a vulnerable point for cyber threats, especially when people have free rein to surf the Web.

And keeping track of what comes into the network via endpoint devices is just one issue; districts must also pay careful attention to what leaves. This is where compliance issues—especially around the privacy of sensitive data and/or student records—re concerned.

Small to medium sized districts as well as large urban districts have to worry about these issues because a small IT operation with relatively few systems under management can keep tight control; a large district often has the IT resources to maintain its systems adequately. Middle-sized school districts may have distributed locations with only a limited IT staff and budget to keep it all running securely and optimally. IT automation is an effective way to address all of these concerns.

### Benefits of IT Automation

When asked which benefits they associate with the automation of specific tasks, a majority of survey respondents pointed out that:

- Automated maintenance reduces downtime, increases productivity, reduces costs, and improves satisfaction, and to a slightly lesser degree, enables companies to reduce IT head count.
- Automated upgrading/patching and backup bring similar results.
- Automated performance monitoring increases productivity and improves user satisfaction.

- Automated availability tools—aside from the obvious benefits of improving uptime and productivity—also improve user satisfaction.

This correlates neatly with our earlier question about client systems management challenges. Nearly half of the respondents reported that satisfactory service levels were difficult to deliver, and nearly 70 percent of respondents report that automating availability tasks does, in fact, raise satisfaction levels

### **The ROI of IT Automation**

The benefits of IT automation are clear, but how do they translate to hours and dollars saved? According to a survey conducted by Enterprise Management Associates, automation technologies can reduce staffing requirements by 50 percent and reduce complexity, improve response time, and reduce the need for ‘putting out fires.’ (*Data Center Automation: Delivering Fast, Efficient and Reliable IT Services*, October 26, 2008).

The study also found that IT automation reduces the average repair time for system problems by an average of more than 60 percent— which represents an immediate benefit in terms of staff time and operational cost, and improved productivity and uptime.

IT automation saves more than just service and repair costs. Daily maintenance such as security updates, patch scans and installations, disk defragmentations, application deployments, and network monitoring all take a toll on IT resources—even if

it’s just a few minutes per day or hours per week. That time adds up, and adds to the savings generated by IT automation. The same is true for reductions in tech support visits. Automation cuts down on travel associated with dispatching technicians to service calls, which conserves resources.



## 7 Evaluation Criteria for an IT Automation Solution

When searching for the right automation solution, schools and universities should evaluate the tools, technology, and resources provided. Effective solutions include those that are:

### 1. Ease of use

A single integrated and consistent Web-based interface eases the learning curve. You should be able to schedule backups, software updates, AV updates and more using a consistent automation platform that simplifies IT service delivery.

### 2. Ease of installation

Look for lightweight solutions that automate the most common systems management tasks but that do not also require significant resources to install or operate. Verify that the solution is scalable and will not require disproportionate amounts of time to maintain, nor require significant time from a vendor's professional services team.

### 3. Ability to increase staff productivity levels

With remote IT capabilities, central management, and automation of routine tasks, you should be able to eliminate the need for additional resources, allowing you to do much more with less.

### 4. Ability to increase end user service levels

You should be able to implement a proactive (instead of reactive) service delivery model, and have systems run more smoothly, with less downtime, providing you with more time to focus on strategic initiatives.



### 5. Ability to decrease risk associated with IT systems

IT automation should help ensure that your systems are in compliance with applicable regulations and requirements. They should perform better and be more secure.

### 6. Completeness of solution

Look for a comprehensive IT automation solution that helps you run entire network smoothly from one central location with a powerful, easy to use, Web-based platform, to simplify the delivery of the most common IT services, such as:

- Automated Systems Management
- IT Asset Management
- Performance Monitoring
- Service Desk / Help Desk
- Patch and Upgrade Management
- IT Management Reporting
- IT Security Management
- Desktop Policy Management
- Data Protection
- Regulatory Compliance

### 7. Affordability

Choose a solution that offers flexible pricing and multiple solution-delivery options (such as on-premise or on-demand) and evaluate carefully the entire lifecycle cost, which may include license fees, maintenance fees, and professional service fees.

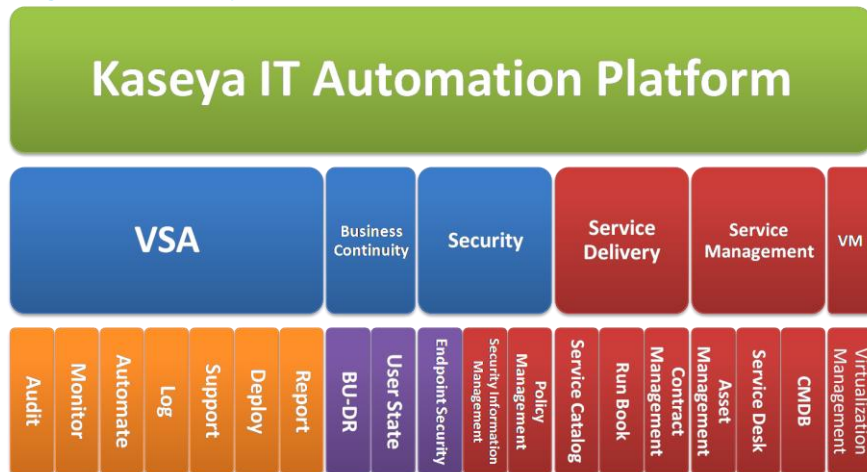
## An IT Automation Solution – The Kaseya IT Automation Platform

### Overview

The Kaseya IT Automation Platform is the ultimate application for managing your entire computing infrastructure. With maximum scalability and flexibility, IT organizations have the power to automate IT administration to increase the productivity of their staff and the organization as a whole. From innovative features like asset management and patch management to remote monitoring, the modularity of Kaseya enables organizations to automate-day-to-day IT tasks, improving systems performance.

The diagram and descriptions below show and describe how it works.

Figure 3 The Kaseya IT Automation Platform



### System Inventory and Audit

The IT tracking features provide IT professionals with an accurate inventory of all hardware, peripherals, software licenses and security updates on the network.

### Patch Management

Kaseya's automated patch management technology allows companies to roll out software updates and security patches seamlessly across the network at once, ensuring a consistent security strategy and robust data protection. Software updates can be scheduled regularly or ad-hoc and rolled out to the entire network, specific departments, physical locations or users. Kaseya's solution automatically determines which desktops, laptops and servers are vulnerable or need to be updated and continuously monitors patch compliance throughout the organization. What's more, software updates are done transparently through the Kaseya solution without affecting end user performance or systems availability.

### Systems Monitoring and Alerts

Kaseya automatically monitors systems for changes, disk capacity, protection violations, performance and downtime from a centralized location. The solution also automatically detects all devices on the network and alerts administrators when new devices are added or taken off-line. Administrators can also easily monitor event logs from a centralized management console to better analyze and fix recurring issues. By monitoring the Windows Event Log, administrators can identify problems before they exist, reducing the possibility of downtime. The systems monitoring and alerts features also save companies time by making it easier to diagnose and fix network and system issues, as unresolved and recurring

problems could result in unnecessary repairs and equipment upgrades.

### Network Policy Enforcement

Network policy enforcement is easier than ever with Kaseya. This feature allows administrators to maintain consistency across the IT environment, making software upgrades, patch management, security and systems monitoring much more efficient. Companies are able to manage file, application and network access policies from a central location and integrate the policies with software inventory lists. Administrators are also able to track network and application usage by department, location, user or workstation, helping to optimize resource allocation to better fit business needs.

### Remote Control

Kaseya's remote access technology allows IT Systems Administrators to provide more complete and more efficient IT services to their organization. Simple administrative tasks and basic help desk issues can be solved remotely. Administrators can access PCs or servers from anywhere via a secure Web-based console without additional infrastructure to manage or software to deploy. This reduces down time and improves response time for most help desk issues. Ideal for distributed computing environments, Kaseya is firewall friendly, leveraging screen sharing technology that works with existing security software and network policies. The remote access technology does not leave the user open to 'man-in-the-middle' attacks and encrypts all communications between the host and user.



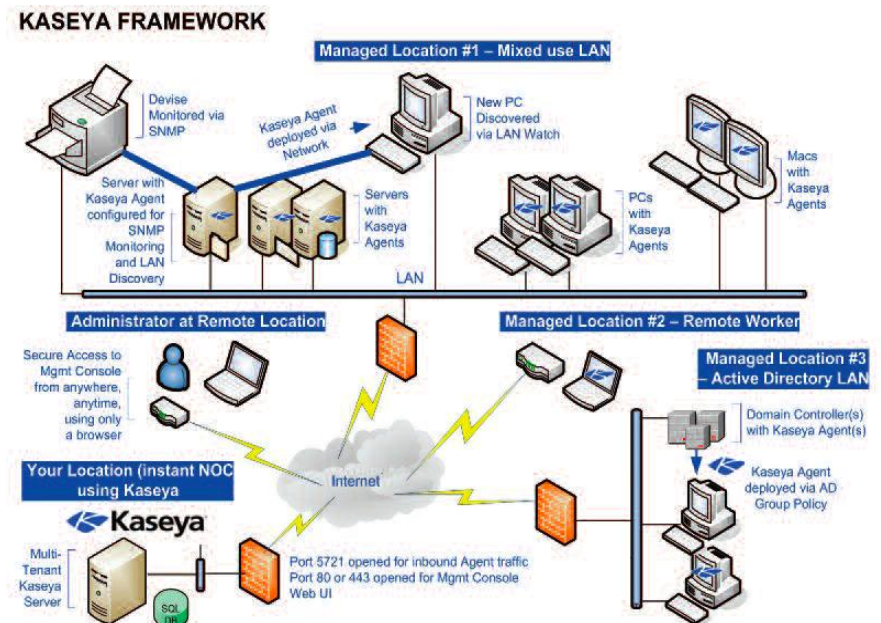
### Comprehensive Reporting

The intuitive report generator allows administrators to get the information they need when they need it, improving the productivity of the IT staff and enhancing the performance of the systems management solution.

### The Kaseya Agent

The Kaseya agent (PC and Mac) provides a non-intrusive, non-evasive and seamless OS service addition. This lightweight agent initiates all communications back to the server. Since the agent will not accept any inbound connections, it is impossible for a third-party application to attack the agent from the network.

**Figure 3 The Kaseya Agent Enables Secure Task Automation in a Distributed Environment**



### **Firewalls and Agents**

Kaseya does not need any input ports opened on client machines. This lets the agent do its job in any network configuration without introducing susceptibility to inbound port probes or new network attacks.

### **Agent Encryption**

Kaseya protects against man-in-the-middle attacks by encrypting all communications between the agent and server with 256-bit RC4 using a key that rolls every time the server tasks the agent (typically at least once per day). Since there are no plain-text data packets passing over the network, there is nothing available for an attacker to exploit.

### **Secure and Reliable Web Access**

Administrators access the Kaseya server through a Web interface after a secure logon process. The system never sends passwords over the network and never stores them in the database. Only each administrator knows his or her password. The client side combines the password with a random challenge, issued by the Kaseya server for each session, and hashes it with SHA-1. The server side tests this result to grant access or not. This unique random challenge protects against a man-in-the-middle attack sniffing the network, capturing the random bits and using them later to access the server. Kaseya's patch management features protect the Web site itself. The patch scan is run on the server every day. As soon as new patches are released, Kaseya automatically detects new patches and applies them automatically. Finally, for maximum Web security, the Kaseya server Web pages fully support operating as an SSL Web site.



### **Flexible Administration**

Deployment is fast and easy, requiring little expertise or additional infrastructure. Administrators simply manage and deploy the software from a central Web console, letting the software automatically deploy and configure while remaining transparent to end users. Kaseya supports many backup and restore options, giving companies the freedom to choose the best data protection solution for their environment without having to worry about management interoperability issues. On premise and on demand options are available and the license model is modular to ensure maximum flexibility for schools of all sizes.



## Case Studies

### **K-12 Case Study: North Conejos School District**

With five schools spread out over a large geographic area in North Conejos School District in Colorado, an IT administrator is required to spend much of his time on the road or manually updating systems in an effort to ensure that computers are available and teachers and administrators have access to student records, inventory databases, schedules, multi-media software, the Internet and other interactive learning tools.

“Things were always falling through the cracks,” said Brad Huffaker, technology director for the district. “Making sure that 500 systems spread across the county have the latest patches, software version, and security settings was virtually impossible. Our systems were often down or performing poorly, causing our teachers to lose confidence in the IT department, and I don’t blame them. Would you use a tool that worked only eight out of every ten times you used it?”

Huffaker tried an IT automation solution from Kaseya. He downloaded a trial and was impressed with the ease of deployment and the logical interface, allowing him to achieve complete visibility into and control over every distributed system on the network. Seeing that its product could help solve many of the management problems associated with distributed enterprise environments, Kaseya tailored its product for the district, arming Huffaker with the ability to implement a more proactive management strategy for his distributed systems.



He was able to conduct Windows updates, monitor for viruses and other security threats, do backups and print out reports from a single management console—regardless of the physical location of the distributed systems—and manage 500 systems proactively.

Huffaker is able to monitor performance and availability service levels remotely while making sure the systems are patched correctly and are protected from data loss and security threats. Kaseya’s scripting engine helps automate basic tasks, eliminating much of the repetition associated with IT maintenance.

At the same time, the Kaseya solution automatically collects information on each system—including model number, operating system, memory, RAM, installed software, security status and peripherals—in a central repository, giving Huffaker a complete snapshot of the environment in real-time and assisting him in annual audits as well as equipment procurement and lifecycle planning.

*“Downtime is virtually non-existent, allowing teachers to do what they are meant to do—teach.”*

*-- Brad Huffaker, technology director, North Conejos School District*

As a result, administrators and teachers have access to the tools and information they need to provide quality education to

the district's 1,200 students. In addition, the school district has been able to increase the number of computers in each school, allowing teachers to leverage interactive teaching tools directly in the classroom.



### **Higher Education Case Study: Virginia Tech University**

Like most universities, Virginia Tech's most important asset is its intellectual property. Leaders in a variety of fields conduct research on campus, pursue intellectual enlightenment, and strive to solve the world's problems while calling Blacksburg, Virginia home. It is vital that the school provide its faculty with a platform to cultivate talent and investigate academic pursuits. At the same time, Virginia Tech needs to provide opportunities for its faculty to apply knowledge in a real-world setting, encouraging interaction between university researchers and business, government, and community organizations.

The university division charged with making connections between Virginia Tech researchers and external organizations is the office of Outreach and International Affairs (OIA). This office matches university staff and resources with the needs of businesses, non-profit organizations, industry associations and local, state, and national government agencies. By applying results achieved in the classroom and in the laboratory to real-world applications, OIA helps disseminate university research results for the betterment of society.

Virginia Tech's Outreach Information Services (OIS) provides technical support for the university's Outreach and International Affairs office that helps solve societal, natural resource, and other problems, works with communities to address local – and global – economic development needs, tailors regional and online graduate and lifelong learning educational opportunities to the people served, and arranges



opportunities for students to serve community organizations while learning.

Faced with managing a geographically disparate IT environment with a small staff, Virginia Tech's Outreach Information Services needed a more efficient solution to ensure systems health and the availability of research data on the network. OIS also needed a more reliable tool to keep track of each project and the resources the university dedicated to it.

OIS deployed a remote, automatic systems management solution from Kaseya that gave IT staff a complete view into systems on the network, including resource utilization, capacity, and performance.

*"The Kaseya solution is central to our day-to-day operations. It allows us to take control of any system on the network and make sure it is running properly with the correct security patches installed."*

-- Scott Farmer, Ph.D., director of Outreach Information Services,  
Virginia Tech University

Administrators are also able to track progress throughout the lifecycle of the project while ensuring systems are running optimally and security patches are installed consistently throughout the environment.



## Video Case Study: Derby School District

Drew Lane made the Derby School District network more efficient and reduced IT-related costs using the Kaseya IT automation platform.



## Resources

### IT Automation Webinars

- [Take the IT Challenge: Managing K-12 Systems with Small Budgets and Few Resources](#)
- [Top 10 Ways to Flunk Out of Your School IT Job](#)

### IT Automation White Papers

- [The Case for Automation – \(ZiffDavis\)](#)
- [IT Operations 2009: An Automation Odyssey \(Forrester\)](#)

### About Kaseya IT Automation Platform

- [Technical Overview](#)
- [Datasheet](#)
- [Free 30 Day Trial](#)

### About Kaseya – [information and video](#)

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