School system deploys Windows images to more than 15,000 laptops across 27 sites in six weeks

IT uses the KACE® Systems Management Appliance and the KACE Systems Deployment Appliance to cut imaging time from almost three hours to one hour and manage thousands of laptops.

"The people at KACE helped us evaluate products. They really wanted to work with us and get us up and running."

Service Desk Lead, Public School System

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CUSTOMER PROFILE

Company	Public school system
Industry	Education
Country	United States
Employees	More than 15,000

BUSINESS NEED

The school system was spending the entire summer deploying images to students' laptops. They wanted to deploy with greater speed and eliminate potential human error.

SOLUTION

The IT team now uses the Quest® KACE® Systems Deployment Appliance to image hundreds of machines at a time and free up summer weeks for other tasks. They use the KACE Systems Management Appliance for service desk, asset management, software distribution and inventory.

BENEFITS

- Boosted the number of laptops imaged to 1,200 per day
- Slashed the average time to deploy an image from three hours to less than one hour
- Reduced risk of imaging errors by minimizing need for human interaction

SOLUTIONS AT A GLANCE

- Unified endpoint management

Vacation for students doesn't mean vacation for this school system's IT team. Every summer, more than 3,000 new laptops need to be imaged and 12,000 current laptops need to be re-imaged.

Summer is never long enough for the IT team in a school system that serves around 15,000 students in preschool through grade 12 across 27 schools. All students in the system, from third grade onward, receive a laptop computer. The educational benefits are huge, but so is the IT workload.

The members of the IT team can spread support, software distribution, inventory and asset management around the entire school year. But when it comes to imaging thousands of laptops, they need to begin work on the first day of summer vacation and complete it before the start of the next school year.

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>
> *Service Desk Lead, Public School System*

THE SHORT, LONG SUMMER OF COMPUTER IMAGING

"Every summer, we bring in 3,000 to 4,000 new laptops to image, on top of about 12,000 current laptops we have to re-image," says the school system's service desk engineer. "On all student and teacher machines, we deploy a 20-gigabyte instructional image. It includes the latest versions of Windows, the Microsoft Office suite, the full Adobe Suite and several learning-tech applications."

Over the years, the school system had tried everything from deploying to each machine manually, to using computer imaging software such as Clonezilla, to running Windows Deployment Services. But they kept running into two main problems.

"The first problem was time," says the service desk engineer, "because with the sheer volume of devices, we would spend the whole summer running image software and sometimes still be imaging as classes were resuming. The other was human interaction. We have to name the computer, assign it to the student and, beginning with fifth-graders, grant local administrator rights. Every year, we lost a lot of time to human error while performing those tasks on thousands of machines."

As daunting as a long summer of imaging work was, the need for a new service desk was even more urgent. The school system was at the end of its contract with the service desk it had used to support its large population of users, so IT evaluated several Windows deployment solutions in depth.

CONFIGURING THE KACE SDA TO IMAGE THOUSANDS OF LAPTOPS

"We needed a service desk," says the service desk lead, "but we also wanted to see which other features we could get in the same product. The KACE® Systems Management Appliance (SMA) offers service desk plus inventory, asset management, patching and software license management. So, we purchased licenses for the SMA, and then for the KACE Systems Deployment Appliance (SDA) for our Windows image software. Not only did it seem that the KACE products could do what we needed, but the people at KACE helped us evaluate products. They really wanted to work with us and get us up and running."

In the past, the school system had run most of the imaging at its main warehouse. Out at school sites, IT had configured independent laptops as servers and switches for imaging as well, but there was no way to manage those machines from the warehouse. That made the prospect of centralized imaging with the KACE SDA very appealing.

PRODUCTS & SERVICES

SOFTWARE

- KACE Systems Management Appliance
- KACE Systems Deployment Appliance

IT pushes images down from the KACE SDA in the data center to blade servers running KACE Remote Site Appliances (RSAs) in the main imaging warehouse. The RSA is a virtual feature that enables network boot devices to be deployed locally at a given site instead of being deployed over the network, saving network bandwidth and time. Six RSAs in the warehouse and several more out at the high schools feed 48-port switches on their own subnet in an imaging rack filled with laptops.

"As soon as each laptop in the rack has booted up, the RSA automatically starts deploying the image onto it," says the service desk engineer. "We keep the network load between 40 and 48 machines per RSA, which works out to roughly 250 laptops being imaged at any time in our main warehouse. That also lets us take advantage of our fiber infrastructure to unicast images among RSAs quickly and reliably."

All student laptops receive the same instructional image. Then, immediately after imaging, each laptop runs a series of post-installation scripts specified in the KACE® SDA. The scripts join the computer to the domain, add the KACE SMA agent, map to network drives, and configure any site-specific software and settings such as printer names, home page, network configuration and local administrator status.

USING THE KACE SMA AND SCRIPTS TO MINIMIZE HUMAN ERROR

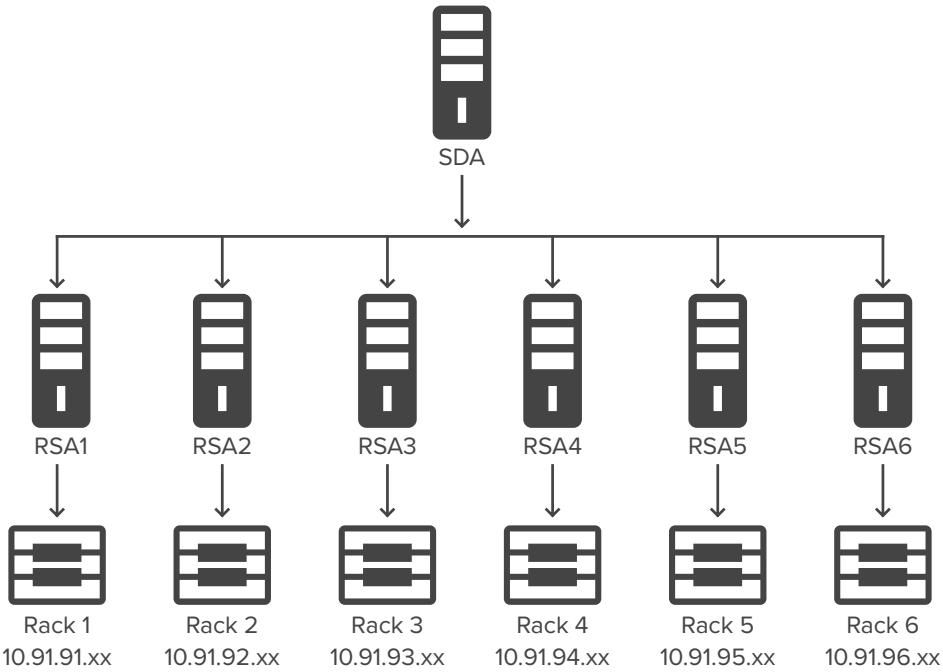
As the IT team had applied the KACE SDA to address the problem of imaging capacity, the engineer applied the SDA to the problem of reducing human interaction in the Windows image deployment process.

"We had to make sure that the serial number was correct, the name was correct and the assignee was correct," the engineer says. "Manually entering and verifying those for thousands of computers is time-consuming and error-prone, so we were keen to automate the task. With KACE, you can load the MAC addresses of all laptops into the KACE SMA and link them to the imaging process on the KACE SDA. But in our configuration, if somebody put a laptop on the wrong rack, the machine would not know it was booting from a different RSA, so it would not be imaged at all."

Using PowerShell, the team wrote a script to capture the serial number and other details of each laptop, which they then imported to KACE Asset Management on the KACE SMA. On each machine, a post-installation task looks up its computer name and serial number in Asset Management, renames the machine and assigns this year's user to it. Thus, IT has automated the task of naming, and any laptop can be imaged in any rack.

"Between the speed of imaging and the fact that we could use our tools with KACE tools, we've been able to accomplish more."

Service Desk Lead, Public School System



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"After we clicked 'Start imaging,' we didn't need to touch anything," says the service desk lead. "Between the speed of imaging and the fact that we could use our tools with KACE tools, we've been able to accomplish more. KACE let us think more creatively about how to solve some of our problems."

GETTING MORE OUT OF KACE THAN THEY HAD BARGAINED FOR

Besides using the KACE® SMA for approximately 20,000 laptops, the school system uses it to track tablets, projectors, televisions, monitors and other devices, bringing the school system's total asset count to almost 34,000 across 27 sites. IT has come to rely on KACE for performing remote user assistance and executing its 600 scripts for everything from installing software to fixing registry keys.

While the 20GB instructional image is the most prevalent in use, IT maintains several others in the KACE SDA: the student donation image for laptops that students want to take with them after graduation, an administrator's image without the learning-tech apps, and a few images for campuses with labs and special programs. Through custom inventory fields, IT can see which image is on each machine and who the local admins are.

GETTING BACK A BIG CHUNK OF SUMMER

The service desk lead remains impressed by how much work her team accomplished within their first summer using KACE: 15,349 machines — laptops and a handful of desktops — imaged within six weeks. Most of those were imaged in the first four weeks.

"Instead of taking an average of three hours per device from start to finish," says the service desk lead, "it now takes just under one hour from start to finish. By getting creative with KACE, we have cut imaging to about a third of the time it used to take. Seeing 1,200 machines being imaged in a single day was just extraordinary for us."

Surprised by how quickly the imaging process was going, the team nevertheless monitored progress, easily pulling reports from the servers and RSAs on network load, server status, throughput and number of laptops imaged. They were also surprised at how much other work the KACE SDA freed them up to perform elsewhere.

Most impressive of all was the fact that they were using a beta release of the KACE SDA on their first try.

"It was hard to believe how stable the product was," the engineer says. "We were pleased to participate in a beta program with KACE yet still use it on such a large project. That's how much confidence we have in working with the people at KACE."

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ABOUT QUEST

Quest provides software solutions for the rapidly changing world of enterprise IT. We help simplify the challenges caused by data explosion, cloud expansion, hybrid data centers, security threats and regulatory requirements. Our portfolio includes solutions for database management, data protection, unified endpoint management, identity and access management, and Microsoft platform management.

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