

Schools Avoid Security Pitfalls in Virtualized Infrastructure

K12 district introduces Trend Micro™ Deep Security to simplify anti-malware protection and maximize consolidation ratios.

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-Steve Bradley, IT Director and Network Administrator, Rocklin Unified School District

EXECUTIVE SUMMARY

Customer Name: Rocklin Unified School District

Industry: K12 Education
Location: Rocklin, California
Web site: www.rocklin.k12.ca.us

Number of Employees: 1,100 (about 11,500

enrolled students)

CHALLENGE:

- Minimize total cost of ownership for security (shrinking budgets)
- Avoid management complexity without exposing the schools to vulnerabilities
- Safely take advantage of virtualization for consolidation and costs savings
- Deploy security that does not degrade the user experience.

SOLUTION:

 On virtualized servers that support applications and virtual desktop infrastructure, replace traditional endpoint security solutions with Trend Micro Deep Security

BUSINESS RESULTS:

- Incredible ease for pushing out security to new virtual machines
- New virtual desktop instances are automatically protected, eliminating window of vulnerability
- 10% lower resource utilization for security (compared to traditional endpoint security solutions)
- Improved consolidation ratios (20 to 26 virtual machines per server)
- Consistent security that can extend to cloud-based application delivery

Challenge

The Management Information Systems (MIS) team at Rocklin Unified School District was an early advocate of virtualization. As a result, the district has been able to save costs through consolidation, and offer students and teachers industry-leading technology during a time when most schools were struggling to deal with historically severe budget cutbacks.

Maintaining security within the centralized, virtualized data center has presented the technology team with challenges, however. At first, the servers were protected using traditional endpoint security solutions. This was a simple solution, but as more applications were deployed on virtual machines, security software created resource contention issues, reducing VM densities and negatively impacting user experience.

Last year, the district took advantage of the opening of a new school to introduce virtual desktop infrastructure (VDI). Knowing that traditional endpoint security solutions would quickly overwhelm the VDI servers, Rocklin Unified knew it was time to look for a security solution designed to address the unique requirements in virtual environments and would support fast application delivery through the school's private cloud.

Solution

Research into virtualization-aware security solutions included reaching out to consulting resources, as well as the District's long-term endpoint security solution provider, Trend Micro.

"It was interesting that the consultants we first talked to advised us against extending antivirus protection to VDI, claiming that each terminal instance was routinely destroyed when the session ended," said Steve Bradley, the administrator of the District's network and acting director of technology. "Trend Micro, on the other hand, pointed out that an unprotected VDI desktop could still get hit by a virus. When you reboot, it would get cleared out, but while it is active, it would make us vulnerable. It made sense to protect these sessions."

Trend Micro also offered Rocklin Unified a solution optimized for protecting virtual desktops. Trend Micro Deep Security could not only protect the new VDI deployment, but also provide performance improvements for the District's entire VMware server environment, enabling more efficient virtual and cloud resources.

Trend Micro Deep Security leverages the threat intelligence of the Trend Micro™ Smart Protection Network™ infrastructure. This next-generation innovation combines sophisticated cloud-based reputation technology, feedback loops, and the expertise of TrendLabs™ researchers to deliver real-time protection from emerging threats.

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Designed for virtualized environments, the VMware-ready solution was installed on all virtual machines, leaving the previous Trend Micro™ Enterprise Security Suite to protect the non-virtualized physical servers and endpoints.

"We have relied on Trend Micro Enterprise Security for more than a decade; it has been a solid product for us, and I believe that it offers better protection than the competitors' offerings," said Bradley. "We knew we could continue to depend on Trend Micro for our new VDI implementation. Trend Micro is a company we really trust, and Deep Security does exactly what we need it to do."

Deep Security now protects all of the District's virtualized servers, including virtual machines that execute private cloud applications as well those supporting VDI sessions.

Results

Switching virtual server protection to Deep Security has improved the District's overall return on investment for virtualization, by lowering memory impact and preventing resource contention on the servers.

"The agentless configuration of Deep Security is definitely much more efficient," said Bradley. "We have gained 10% of our server resources back, and can increase our VM-to-physical host consolidation ratio as a result."

Deep Security has alleviated concerns about the VDI virtual sessions introducing vulnerabilities to the data center. "With Deep Security, each new VDI instance is automatically detected and protected—the ease of pushing out antivirus protection is incredible," said Bradley.

One solution that protects all of the virtual servers avoids unnecessary complexity for the technology team. Each Citrix VDI session is now just another application on the VMware servers.

The total cost of ownership is also improved, with licensing that is more economical for virtual environments. "Overall, it is more cost-effective to protect our virtual servers with Deep Security, compared to traditional antivirus products available for physical endpoints," said Bradley.

"If I had to license security software for every one of our desktops, it would cost more. Add to that the server resources we save, and the resulting increase in our consolidation ratio, and you can see that Deep Security is a smart choice for school districts that want to maximize ROI for VDI.

"One final note—I have to give thanks to the Trend Micro technical team. The help we received during our deployment was totally awesome. Even when we had a major problem that ended up being the fault of another vendor, Trend Micro really stuck with us. Their expertise and support through the years, and through this most recent deployment, has been invaluable to the District."

Next Steps

The success of the VDI deployment at the new school has given the District the go-ahead to begin introducing it to other sites. Hosting virtual terminal sessions within the centralized data center is yet another step that Rocklin Unified has taken on its journey to the cloud.

"We deliver applications within our own private cloud," explained Bradley. "Inside this cloud, Trend Micro makes it easy for us to meet our standards for security and helps keep management simple as our environment evolves. And Deep Security even helps the end-user experience. Everyone wants everything now; with the efficiency of Deep Security, users can login faster and we can speed up application delivery even within a dynamic cloud environment. And that makes us all happy."

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DEPLOYMENT ENVIRONMENT

20 sites (supported by one central data center)

20 physical servers; 200 virtual machines 250 VDI endpoints (pilot school)

Trend Micro Enterprise Security Suite

Trend Micro Deep Security

Trend Micro Hosted Email Security

Customer Profile

Rocklin opened its first school in 1866 when the granite quarries and railroad brought settlers to the area. The District has continually expanded, and currently administers ten elementary schools, two middle schools, two state-of-the-art high schools, and an Alternative Education Center. The people of Rocklin greatly value education and demonstrate their dedication through active participation. Today, the Rocklin Unified School District comprises a rapidly growing community of educators and families committed to excellence. The District strives to ensure that all students acquire the skills and knowledge to reach their highest potential and become selfreliant, critical thinkers and responsible citizens. This is accomplished by providing a rigorous, well-rounded, student-centered curriculum in partnership with all facets of the community.

Trend Micro Security

- Trend Micro™ Enterprise Security Suite
- http://us.trendmicro.com/us/products/enterprise/security-suite/index.html
- Trend Micro Deep Security
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