



# Driving epic change in educational technology

Corona-Norco Unified School District is engaging students with digital tools like never before using high-performance virtual desktops.

“With virtual desktops, we can offer a transformational experience on any device a student brings in.”

- Brian Troudy, Director, Networking & Infrastructure, Corona-Norco Unified School District

School districts are throwing off the shackles of traditional PCs. However, doing so requires infrastructure that can provide high performance for resource-hungry applications.

## Challenges

- Keep up with unprecedented changes in classroom technology
- Maximize equipment use and uptime
- Support bring-your-own device (BYOD) initiatives

Corona-Norco Unified School District (CNUSD) is the largest school district in Riverside County and the 10th largest district in California. CNUSD has been providing quality education to students of the Corona and Norco area for more than 120 years and continues engaging students today using technology.

“Technology is now the primary tool through which we deliver education,” says Brian Troudy, director, networking & infrastructure. “Providing a high-quality experience is essential.”

To improve efficiency and performance, the district decided to replace 4500 PCs in student labs with a virtual desktop infrastructure (VDI) on zero clients. CNUSD also wanted to support BYOD initiatives to allow students to access applications from any device. However, the district needed an infrastructure that could provide as good or better performance than physical PCs, even for resource-intensive applications, such as CAD/CAM and 3D animation suites.

## Case Study | Corona-Norco Unified School District

Size: 54,000 Students; 5,000 Employees

Location: Riverside, California

Industry: Education (K-12)



“We started our VDI pilot with 300 users on an HP BladeSystem,” says Troudy. “But as we scaled into the thousands, it became clear we needed servers and storage that were up to the task.”

## Scale VDI environment with an integrated infrastructure solution from Cisco and Nimble Storage.

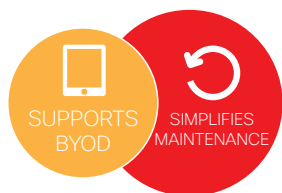
### Solutions

- Deployed a SmartStack™: an integrated infrastructure solution by Nimble Storage and Cisco
- Used Cisco Nexus® switches and networking solutions
- Accelerated virtual desktops with NVIDIA GRID cards

### Expanding student learning opportunities

The ability to add graphic acceleration to our VDI deployments allows us to virtualize the delivery of CAD/CAM and robotics applications. By using virtual desktops, the district can extend industrial technology, 3D animation, and video game development classes to multiple labs, bringing cutting-edge learning opportunities to more students.

“With Cisco UCS and NVIDIA GRID cards boosting performance, we can offer virtual, high-performance workstations,” says Troudy. “Before, we didn’t have enough physical machines to deliver these types of classes effectively.”



### Improving user experiences

Educational applications are more responsive on virtual desktops powered by enterprise-class Cisco® hardware. Teachers can focus on teaching instead of fixing technical issues.

“We’ve seen a night and day difference in the end-user experience,” says Troudy. “Teachers are excited and talking to their peers at other districts.”

### Maintenance and deployment in minutes

The ability to maintain desktop images centrally and instantly roll out and update applications has changed the game for the district’s IT staff—and is much more cost-effective. “Cisco Capital® Leasing helped us do the most with our operating budget,” says Troudy.

“We now have one tech for every 2500 computers,” says Troudy. “We can respond to issues in minutes instead of days or weeks. And because zero clients have no moving parts, we can shift to a nine-year refresh cycle.”







## Radical uptime

Machines no longer sit idle in labs, waiting for a tech to remediate issues. "Keeping every machine in our labs operational was a radical concept!" says Troudy.

**Results**

- Provides sufficient horsepower for CAD/CAM and 3D modeling
- Enables BYOD initiatives, putting more technology in classrooms
- Simplifies maintenance throughout the district

## Enhancing communications and collaboration

CNUSD plans to offer nearly all of its applications on virtual desktops in the near future. The district will also help staff connect and collaborate for better education. "We're getting ready to deploy Cisco Unified Communications districtwide, and collaboration is a huge focus for us," says Troudy.

### Products & Services

<p><b>Unified Computing</b></p> <ul style="list-style-type: none"> <li>• Cisco UCS B200 M3 Blade Servers</li> <li>• Cisco UCS C-Series Servers (for Autodesk AutoCAD)</li> <li>• Cisco UCS Manager</li> </ul>	<p><b>Virtualization</b></p> <ul style="list-style-type: none"> <li>• VMware vSphere 6</li> <li>• VMware Horizon View 6.2</li> </ul>
<p><b>Routing and Switching</b></p> <ul style="list-style-type: none"> <li>• Cisco Nexus 7700 switches</li> </ul>	<p><b>Hardware Acceleration</b></p> <ul style="list-style-type: none"> <li>• NVIDIA GRID K1 cards</li> </ul>
<p><b>Security</b></p> <ul style="list-style-type: none"> <li>• Cisco ASA 5585-X Adaptive Security Appliance (firewall)</li> </ul>	<p><b>Storage</b></p> <ul style="list-style-type: none"> <li>• Nimble CS700 Arrays</li> </ul>



**Americas Headquarters**  
Cisco Systems, Inc.  
San Jose, CA

**Asia Pacific Headquarters**  
Cisco Systems (USA) Pte. Ltd.  
Singapore

**Europe Headquarters**  
Cisco Systems International BV Amsterdam,  
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at [www.cisco.com/go/offices](http://www.cisco.com/go/offices).

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: [www.cisco.com/go/trademarks](http://www.cisco.com/go/trademarks). Third-party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)

© 2016 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.