

Equipping high school students with the skills to run the factories of the future.

How **Istituto di Istruzione Superiore C. E. Gadda** created a virtual desktop infrastructure based on VMware Horizon® and high-performance Lenovo ThinkAgile VX Series appliances, allowing it to train its students in cutting-edge computer assisted design techniques whether they are working on campus or at home.

Lenovo Infrastructure Solutions
for The Data-Centered

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Background

Established in 1973, Istituto di Istruzione Superiore C. E. Gadda (IIS C. E. Gadda) is a high school serving students across Italy's Emilia Romagna region. Located in the "Motor Valley"—a region with over 100 years of history in the automotive industry—the organization aims to equip learners with the skills they need to enter Italy's high-tech automotive manufacturing sector.

Through its partnerships with other local high schools, training organizations and companies, IIS C. E. Gadda is striving to support the region's engineering value chain, promote the development of advanced composite materials, and ultimately contribute to sustained economic growth in Emilia Romagna.

To help achieve these goals, IIS C. E. Gadda has set its sights on becoming one of the country's go-to institutions for students interested in pursuing careers in the engineering and automotive industry. To ensure students are equipped with the skills and experience to thrive in the working world, the organization is continually investing in leading-edge technology, including 3D computer assisted design (CAD), computer numerical control (CNC), and robotics.

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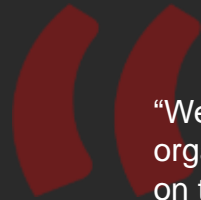
Challenge

As part of its ongoing investment in innovative learning tools for students, IIS C. E. Gadda is establishing a brand-new IT teaching laboratory, designed to allow more than 100 students to learn advanced fabrication techniques. By combining technologies such as CAD, CNC, and robotics with augmented reality solutions, the objective is to prepare students for the new challenges of research and work.

Realizing this vision presented some complex challenges for IIS C. E. Gadda. Local and national lockdowns during the COVID-19 pandemic forced many learners to self-isolate at home, cutting them off from the advanced equipment available on site at the institute. At the same time, student admissions have grown year-on-year. It was crucial for the school to run the new teaching program effectively without driving up costs by having to add extra teaching and support staff.

Margherita Rabaglia, Headteacher of IIS C. E. Gadda, explains: “In the past, our technical and teaching staff had to manually prepare our laptops and workstations ahead of each lesson—for example, by opening and configuring the required software. As well as consuming significant amounts of time, we quickly found that this approach wasn’t viable for remote learning. Some of our students are from disadvantaged backgrounds, and don’t have a powerful enough computer at home to complete the planned activities for each lesson.”

To solve the challenge, IIS C. E. Gadda looked for a way to empower its students and teachers with faster access to digital learning resources. The aim was to create a new virtual desktop infrastructure (VDI)—enabling students to access high-performance IT resources from practically any laptop or desktop with an internet connection, and helping teachers to dramatically reduce the time required to set up new lessons and activities.



“We collaborate closely with leading automotive businesses, and many of those organizations rely heavily on VDI solutions—so we were confident that we were on the right track. We also saw value in giving students experience of using VDI technology, as they are likely to encounter it in their career and study path.”

Margherita Rabaglia

Headteacher, Istituto di Istruzione Superiore C. E. Gadda

A child's hands are shown working on a custom-built robotic assembly. The assembly is constructed using a black microcontroller board (likely an Arduino or Raspberry Pi) as the base. It is heavily modified with various electronic components, including a small LCD screen, several push buttons, and a variety of sensors and modules. The entire assembly is held together by a complex arrangement of grey, white, and red LEGO bricks and Technic beams. A black rubber band is used to secure some of the components. The child is wearing a black and white beaded bracelet on their right wrist. The background is a light-colored wooden table.

Why Lenovo and VMware? High performance at a competitive price point.

After considering a number of leading IT vendors, IIS C. E. Gadda selected a VDI solution from Lenovo and VMware. Based on two high-performance Lenovo ThinkAgile VX Series appliances equipped with NVIDIA T4 GPUs, the new VDI environment is enabled by VMware vSphere®, VMware vSAN®, and VMware Horizon®, with NVIDIA RTX Virtual Workstation to enable GPU acceleration for the organization's most demanding use cases. To ensure the platform is always accessible to learners and teachers, the organization has enabled a high-availability configuration with a two-node Lenovo ThinkAgile VX hyperconverged infrastructure (HCI) solution.

"Of all the vendors we evaluated, none could match the combination of price and performance from Lenovo and VMware," recalls Rabaglia. "At first, we were somewhat skeptical that a VDI environment would be able to support our more demanding applications, particularly our graphically intensive CAD workloads. However, when we saw how smooth the VDI experience was with the Lenovo ThinkAgile VX HCI solution, we knew that we were making the right choice."



“Another reason that we selected Lenovo is the fact that they were willing to go the extra mile. Lenovo listened closely to what we wanted and worked side-by-side with us to co-create a VDI environment that truly meets our needs.”

Margherita Rabaglia

Headteacher, Istituto di Istruzione Superiore C. E. Gadda

Ensuring equal access to learning.

With support from Lenovo Professional Services, IIS C. E. Gadda sized, deployed, and configured its new VDI solution. Today, the organization has repurposed 50 existing workstations to act as thin clients, effectively transforming legacy machines into high-performance IT platforms. The VDI solution also helps to ensure that students working remotely are not constrained by the hardware limitations of their home desktops or laptops.

“Thanks to the Lenovo ThinkAgile VX HCI solution, our school can provide cutting-edge digital services to both teachers and students,” comments Rabaglia. “We are now running highly demanding applications such as Autodesk AutoCAD and Autodesk Fusion 360 smoothly in virtual desktop environments, contributing to better experiences for our learners.”



“In the long term, we see that the ability to manage our workstation environments remotely via VMware Horizon will help us to reduce costs and, above all, operational times for IT.”

Margherita Rabaglia

Headteacher, Istituto di Istruzione Superiore
C. E. Gadda

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Results

By making the switch from a traditional workstation infrastructure to an advanced VDI environment, IIS C. E. Gadda can make its specialist classes more inclusive and effective than ever before. Teachers can now build customized environments for each lesson and activate them for students at the touch of a button—slashing the time required to prepare the lab for the next lesson. Most importantly, the solution offers the same high-quality experience to remote users logging in from home, allowing the organization to better support students from disadvantaged backgrounds.

“One of the biggest changes we’ve noticed is how seamless it is to set up and manage our workstations—we can even carry out maintenance tasks remotely,” comments Rabaglia. “While the number of students admitted to IIS C. E. Gadda is growing year-on-year, the efficiencies we’ve unlocked with Lenovo and VMware mean we can keep our IT headcount flat.”



- ✓ Supports demanding applications such as Autodesk AutoCAD and Autodesk Fusion 360
- ✓ Reduces the cost and complexity of workstation management
- ✓ Keeps IT headcount flat, even as student admissions rise



“In the next school year, our students will start using the Lenovo and VMware VDI environment for the first time. We’re certain the feedback will be positive, and we’re confident that our new labs program will equip our students with the skills they need to thrive in their further studies and careers.”

Margherita Rabaglia

Headteacher, Istituto di Istruzione Superiore C. E. Gadda

What will you do with Lenovo software-defined infrastructure solutions?

The Data-Centered deliver classes to students at home and on campus with Lenovo smarter infrastructure solutions, powered by VMware.

[Explore Lenovo Software-Defined Infrastructure Solutions](#)

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