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Boosting PC-Client Infrastructure Efficiency in Education

How the Intel vPro® platform with Intel® Active Management Technology enables remote management of devices in German schools, to streamline tech support, enhance education, and keep costs down.

STADT FRANKFURT AM MAIN

The city of Frankfurt in Germany needed a powerful technology solution to streamline the modernization of IT infrastructure in schools across the entire city district. The Frankfurt am Main (Frankfurt) City School Department worked with REDNET, a specialized systems integrator, to roll out new PCs across the city's 170 schools, from classroom PCs to flexible notebook sets to PC labs. Using the Intel vPro® platform, both REDNET and the city's IT department for schools can manage all devices remotely by enabling Intel® Active Management Technology (Intel® AMT). This helps save the schools time, reduce the cost of on-site service and improve their IT infrastructure.

Challenge

One hundred and seventy schools required a rolling IT infrastructure update in a way that was cost-effective, easily manageable, and sustainable for years to come. The plan was to attain a ratio of one PC for every five students by equipping every classroom with a new PC, mobile PC storage and charging carts, and to install or modernize PC lab rooms. This required implementing and onboarding many managed devices across the city with a five-year rolling cycle. The number of PCs per student will increase with further digitization initiatives, which have been launched as part of the response to the Covid-19 crisis.

"Intel® Core™ i5 processors with Intel vPro® technology are now part of our standard specification, ensuring reliable performance over our five-year rolling cycle."

—**Hr. Geißler**
  PC and security department team lead, Frankfurt am Main (Frankfurt) City School Department

Solution

The School Department had experience in working with Intel vPro technology. It chose to engage with a specialized systems integrator, REDNET, to install, onboard and manage devices with the Intel vPro platform. No matter the manufacturer of the PC, Intel AMT—a part of the Intel vPro platform—enables the School Department to remotely manage the devices from installing operating systems to rolling out software while REDNET provides first-level remote support for hardware and software issues. With out-of-band remote capabilities, support can happen even when the device is powered off.

Results

With more modern IT facilities, boot times and responsiveness have improved, allowing teachers more time and resources to educate students. The remote management capabilities have significantly reduced downtime of devices and the School Department is on hand to maintain the required software updates. REDNET can provide enhanced first-level service with reduced on-site support, relieving teachers and saving time on both sides.

Implementing sustainable IT infrastructure in schools across Frankfurt

Every child deserves a comprehensive education that sets them up for the rest of their lives, and inclusion is a key pillar for the City of Frankfurt School Department. It is paramount that every student can access the educational resources they need to make the most of their schooling.

In Germany, the city or district council is responsible for allocating state-provided funding for local educational supplies. One of the largest cities in Germany, Frankfurt has 170 schools, from K12 to vocational education, and is responsible for over 100,000 students and 7,000 teachers. The Frankfurt City School Department manages IT funding provided by federal and state authorities to deliver a state-of-the-art PC client infrastructure that is easy to use and to manage. Aiming to boost digitalization in education, the School Department set itself the goal of providing at least one PC and one interactive whiteboard in every classroom. This meant that teachers and pupils would have access to the electronic tools to enhance education, and management staff would benefit from updated technology for administrative tasks.

For this strategy to work, its approach needed to be highly organized to manage the entire fleet of devices. However, the staff and teachers working in the schools were unable to find time in their busy schedules to manage such an operation. Nor did they have the technical skill set required to manage the onboarding or upkeep of so many devices.

One designated IT manager for the school network would not have been an option either, as traveling between all the schools and within some very large campuses would have been expensive and time consuming. Not to mention Frankfurt's gridlock inner city traffic would have delayed response times if there were any technical issues that needed last-minute attention. The school district needed a means of managing all the devices from a central point to ensure consistency across the fleet and handle any issues efficiently.

Another requirement of this initiative was that it would be financially sustainable over time. The budget, which the state government of Hessen provides Frankfurt for the schools' IT is non-negotiable. Therefore, any investments made must be cost-effective and predictable, providing the best possible return.

Intel® Active Management Technology provides a streamlined solution

By working with REDNET, The Frankfurt City School Department will be able to implement the devices it needs, mostly comprised of desktop PCs. All are powered by Intel® Core™ i5 or i7 processors with the Intel vPro® platform featuring Intel® AMT. With Intel AMT activated on the devices, REDNET was able to offer the Department a city-wide centralized first-level support service, which works on every device, regardless of the original equipment manufacturer (OEM). This gave the Department flexibility across the district, allowing it to choose whichever devices it wanted while at the same time ensuring that each PC across the schools was managed and maintained consistently.

The manageability features of the Intel vPro platform allow the Department to ensure that each device stays up to date with the required software, quickly and seamlessly. On the first-level support side, REDNET can remotely help all users around the schools with any problem – even if the PC shows a blue screen or a BIOS setting has to be changed.

For example, REDNET can remotely log on to a system to provide support even if devices are powered down or offline. This means that the Department can be confident that all schools in the district are quickly and well supported for any IT issue without being cut from their devices for multiple hours, waiting for on-site support.

The solution also addressed the school district's cost requirements. Since Intel AMT comes as a standard component of the Intel vPro platform, the Frankfurt City School Department does not need to pay for additional licensing or subscription costs for remote management software. This helps ensure the Department's budget is optimized.

"Traditionally IT departments for education and school districts prove to be quite difficult. The Intel vPro® platform with Intel® Active Management Technology helps provide an easy solution with remote IT support. Intel® AMT helps reduce costs and keeps the workforce more secure and productive."

—Stephanie Hallford
VP Client Computing Group, VP & GM Business Client Platform, Intel Corp.

The Intel vPro platform also includes the Intel® Stable Image Platform Program (Intel® SIPP). This offers platform validation that aims to eliminate the need for hardware changes throughout the buying cycle, for at least 15 months, or until the next generation release. Intel SIPP helps simplify and reduce costs for managing a fleet of devices, while also minimizing the time needed to onboard new devices.

Boosted efficiency in the classroom with modernized IT solutions

Currently, the devices are being implemented in phases by REDNET with support from Intel. The first phase of the project was the implementation of 7,500 desktop PCs, and the next phase will see 15,000 more desktop PCs onboarded.

Those Frankfurt am Main city schools that received devices in the first wave of the project have already reaped the benefits.

The performance of these new PCs has increased in terms of system responsiveness and boot times. This has helped improve the productivity of teachers and students, who are now able to use their time more effectively.

Furthermore, the enhanced responsiveness of these devices makes it possible to implement new education programs with modern software, such as AI statistics and data science. This access to more tools helps students develop a broader range of skills to prepare them for their future education and careers.

Spotlight on REDNET and The Frankfurt City School Department

The IT systems integrator REDNET is based in Mainz, Germany and works closely with around 175 general education and vocational schools of the Frankfurt city area. With over 760,000 inhabitants Frankfurt City is the largest community in the state Hesse. As an expert for educational institutions, REDNET manages maintenance and support within the pedagogical network. The company is the contact for schools and is responsible for a steadily growing number of devices (currently around 21,000), including PCs, notebooks, convertibles, digital blackboard solutions, printers, scanners and the WLAN infrastructure. Around 96,000 end users in schools, usually teachers, can turn to REDNET for support. This includes comprehensive services (remote and on-site) as part of a service and support team operated by REDNET.

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