Case Study

Startups
Security and Manageability

Remotely controlling laptops even when the power is off: Why a startup company that handles big data chose the Intel vPro® platform

Laptops' execution capabilities is key to being ahead of the game, especially among startups with no IT department

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High processing power is frequently demanded of the CPU, the heart of the PC. High processing speed is essential, but high-performing execution capability is often more important in actual business settings. Additionally, execution capability is derived from flexible management.

It is clear that this has become even more pronounced as the telework movement has spread. For example, there are many situations where PCs and data need to be accessed remotely but cannot be taken out of the office due to corporate compliance.

Processing speed alone is inadequate when secure access to data is needed from home or on the road. While network-level and software-level security measures such as firewalls and VPNs are effective to a certain extent, there are cases where stronger security is required due to the nature of the data being handled. Evidently, execution capability is essential in addition to processing power.

This is the exact issue facing Symmetry Dimensions Inc. (hereinafter, Symmetry), a startup developing a unique digital twin platform. The company, which handles large volumes of highly accurate, processing-intensive data and frequently accesses them from remote locations, sought a solution in the Intel vPro® platform.

Digital twin: Carrying out highly accurate simulations with large volumes of data

Digital twin is a technology for performing advanced simulations that reflect real-world events in a virtual world. The concept entails simulating movements in the real world by quantifying and databasing various real-world phenomena such as topography, buildings, human flow, and climate changes, then reproducing the phenomena in a virtual space.

Consider this: what would happen if we were to construct the largest skyscraper ever built in the heart of a city? What kind of impact would this have on the surrounding buildings and the flow of people? These simulations can be conducted in a virtual space, as they are difficult to test in reality until they are actually constructed. This technology allows for repeated verification under different conditions to find the optimal solution and then reflect it in reality, attracting attention as a new means of solving social issues.

Since these simulations are based on the real world, it is easy to imagine the enormous volume of data in a digital twin. There are 3D data and video data for visualizing virtual spaces, point cloud data for reproducing measured values, and the like. The amount of data increases with attempts made to improve simulation accuracy. Therefore, workloads carried out on PCs also increase.

Symmetry, founded in the United States in 2014, provides a platform called "SYMMETRY" that focuses on the architecture and construction fields in the digital twin world. For Mr. Numakura, the company's founder and CEO, connecting remotely to a PC used for in-house development is an everyday occurrence as he frequently demonstrates SYMMETRY in offsite settings such as lectures. It was essential to have a platform that can not only handle large volumes of high-load data, but also make remote access as secure as possible.

Therefore, the company decided to adopt the Intel vPro® platform, which has a number of security and remote control features installed at the hardware level in the CPU and chipset.

Mr. Numakura's ASUS ExpertBook B9 laptop is powered by the 10th Gen Intel® Core™ vPro® processor family. Despite having a relatively large 14-inch display, some models are quite light, weighing about 1.9lbs, with around 30 hours of battery life. This laptop can handle SYMMETRY's heavy data stress-free with its high-speed performance, demonstrating high mobile performance. Mr. Numakura said, "I've never had any issues using it while on the go."

The ASUS ExpertBook B9, which Mr. Numakura uses on a regular basis. A lightweight and compact mobile PC, capable of smooth heavy graphics processing for digital twin.

Controlling remotely even when the power is off: Numerous technologies that enable flexible management

A number of Intel vPro® platform-compatible PCs are deployed in SYMMETRY's in-house and remote locations. The Intel® Active Management Technology (Intel® AMT) used here facilitates remote management and support of these PCs. Available for PCs powered by the Intel® Core™ vPro® processor family, Intel® AMT allows remote control even when a PC is powered off, regardless of the operating system, such as Windows.

When managing a PC remotely, the operation is usually carried out through a remote management mechanism that runs on the operating system. However, in this situation, the PC cannot be accessed unless the OS has started up. Given that telework is ongoing, it is not uncommon to want to access and handle data from home that is only available at an in-house PC. However, it isn't always possible to turn on an in-house PC, as workers cannot predict when it will be used.

Intel® AMT removes that obstacle; a PC can be accessed regardless of whether it is booted up or turned off. It is possible to freely carry out important control operations remotely, such as turning a PC on and off, accessing the BIOS setup menu, and recovering from errors that occur on the OS. In Mr. Numakura's case, the in-house PC that needs to be accessed during a demonstration can still be operated remotely to access the resources inside even if it is turned off.

The Intel® Endpoint Management Assistant (Intel® EMA) is also offered. It is a remote management tool available free of charge for the Intel vPro® platform and allows control via the cloud. In other words, it allows access not only to PCs that are protected by the corporate firewall, but also to PCs outside the corporate firewall, as long as they are connected to the Internet. This allows for more flexible management.

"We often use overseas software for business purposes, so it is very convenient to be able to set up such software remotely," Mr. Numakura said. Without a PC that is powered by the Intel vPro® platform, workers would be forced to go to work in person, or they would need to go to a distant location to turn each unit on and set them up.

In addition, Intel® EMA is also used when updating Windows at defined times. If an update is unintentionally executed during business hours, the PC's processing performance is impaired; and if the PC restarts, the business itself may be forced to stop. However, this inconvenience can be prevented by setting up the Intel® EMA to execute updates during night hours. Mr. Numakura emphasizes the significance of the Intel vPro® platform, "In terms of management (efficiency), it is comparable to having several human resources."

"Intel® AMT and Intel® EMA enable secure and highly efficient remote PC management," Mr. Numakura said.

Hardware-based security provides peace of mind for startups

Public institutions and private companies using the digital twin platform for advanced simulations handle data that includes extremely sensitive information. According to Mr. Numakura, "software-based security alone is not sufficient" in managing such highly confidential data. The hardware-based security features of the Intel vPro® platform play a major role in this regard.

The Intel vPro® platform includes Intel® Hardware Shield, a set of security features. One such security feature is Intel® Threat Detection Technology, which achieves efficient hardware-level threat detection and application data protection using the CPU and GPU. In addition, it is possible to deal with threats targeting the BIOS before the operating system starts up.

"The fact that it has powerful hardware-based security features that protect against attacks on the firmware and BIOS gives us great peace of mind," said Mr. Numakura.

When a startup like Symmetry that wants to accelerate its business by focusing on its core, establishes teleworking company-wide, even a minor PC problem can directly lead to a slowdown in employee work speed. Unlike in large companies, there is no dedicated IT person or department. Instead, staff with detailed knowledge of PCs and IT often have to attend to problems with careful attention.

This is why the numerous features of the Intel vPro® platform are so reassuring to the company. One significant advantage is the ability to respond remotely and continue the business with minimal loss rather than having to rush to the scene of a problem.

The Intel vPro® platform has become essential in supporting the execution of Symmetry's business affairs. As Mr. Numakura puts it, "Being able to operate and manage, even remotely in a telework environment, is exactly the working style that we want."

Laptops can be used with peace of mind, thanks to hardware-based security features.

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