

# Proof of Concept (PoC) Case Study Education



Intel vPro® Platform  
Intel® Endpoint Management Assistant (Intel® EMA)



## Busan Computer Science High School Intel® EMA Solution

### Overview



Busan Computer Science High School has many computer classes considering the purpose of its foundation. It faced a diverse range of problems during online classes because of COVID-19, and teachers struggled to handle them. The introduction of Intel EMA in the class has made it easy to see at a glance how students are participating. In particular, Intel EMA makes it possible to provide immediate remote support, allowing for more interaction with students and increasing class efficiency, resulting in higher student and teacher satisfaction. With the Intel vPro® technology, multiple personal computers (PCs) in computer labs could be managed simultaneously, and PC statuses could be remotely checked to resolve problems faster.

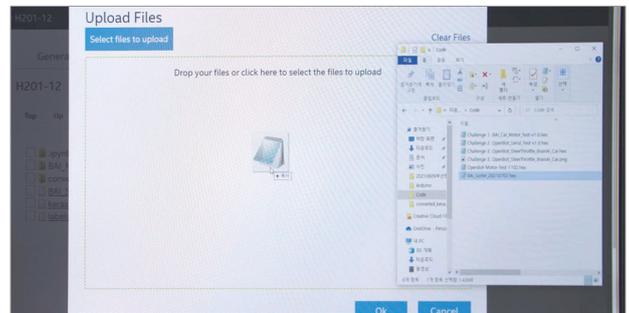
This school improved the quality of classes through Intel EMA and the Intel vPro platform, and its teachers were able to significantly reduce their burden of managing PCs.

### 1. Problems During Online Classes

When a problem occurred during an online class, it was difficult to resolve remotely. In addition, as each student's understanding differed, checking and resolving relevant problems was also a burden. For example, in a class that required interaction between a teacher and students, it was difficult for the teacher to check if students followed their instructions and fixed their coding errors while just watching their faces through Teams or Zoom. Sharing a student's screen was not ideal because other students could see it.

### 2) File transmission by remotely setting a directory

When a file had to be sent during an online class, the teacher could send it via e-mail, but it was hard to remotely support the file transmission if the file needed to be saved in a specific folder. However, with the file transmission function provided by Intel EMA, a teacher could send a file to a specific location or use a file to directly help install a program. Thus, a teacher could conduct classes without delay.



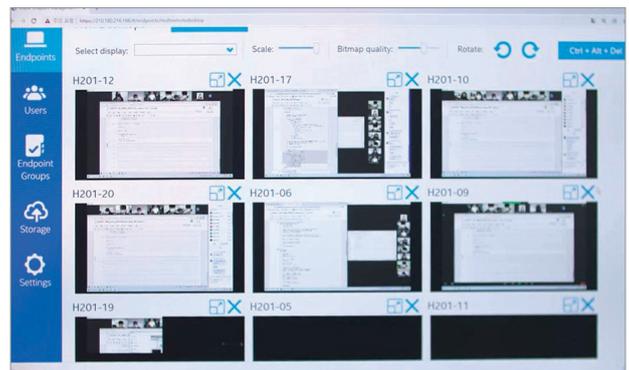
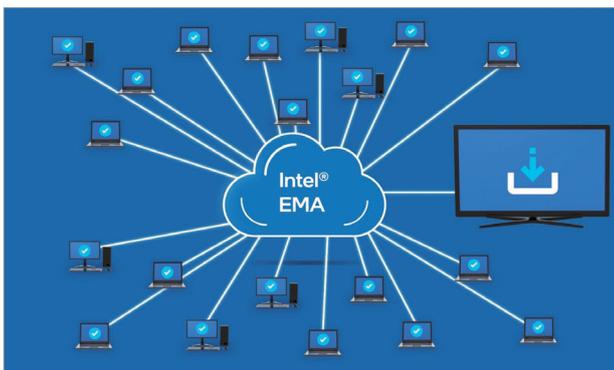
### 2. Efficient Classes with Intel® EMA

#### 1) Fast remote support through the In-band keyboard, video, mouse (KVM) function

During a coding class, teachers frequently needed to help students by operating their mouse and keyboard. With the in-band KVM function unsupported by Teams or Zoom, a teacher could immediately fix a coding error on the student's PC. In particular, a teacher gave Intel valuable feedback on Intel EMA, saying, "With easy remote control through Intel EMA, I could deliver customized education regardless of the student's location."

#### 3) Checking the class progress of students simultaneously

The In-band KVM function allows a teacher to monitor multiple computer screens. With this function, a teacher can regularly check the screens of all students to see if a student is lagging behind. If immediate support is needed, a teacher can help the student by using the keyboard and mouse on the student's PC. Thus, most students can achieve the goals of the classes despite the difficulty of online classes.



#### 4) Efficient management of all school PCs

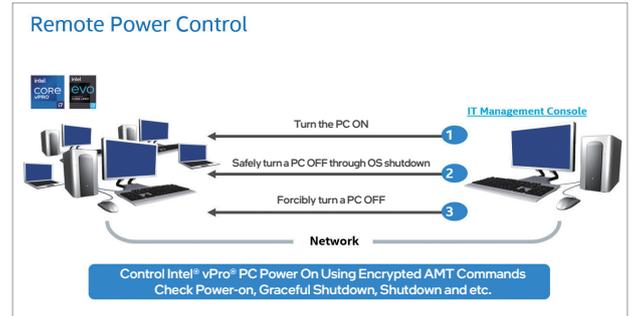
The advantages of the Intel EMA technology are not limited to PCs in schools. Installing Intel® EMA on most of the school's PCs allowed an information technology (IT) teacher to remotely respond to a problem on their PC without visiting the site where it occurred. In particular, they could remotely install a printer driver allowing for a savings in time.

- With several students sharing one PC, occasionally unauthorized programs were installed and deleted, this caused some PCs to become unstable. Therefore, an IT teacher had to regularly re-format (factory reset) all PCs. This time-consuming operation needed to be done manually and directly by the teacher. Intel® EMA saves time because it allows for a remote factory reset.

### 3. Efficient Management of PCs through Intel® vPro®

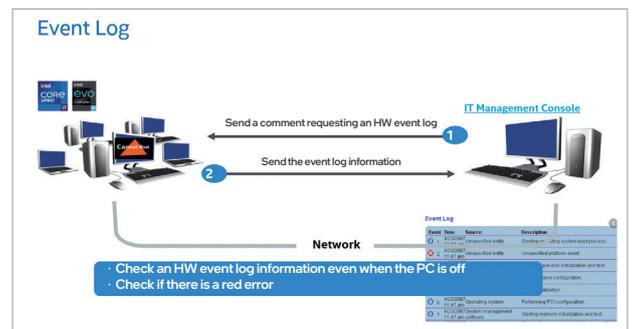
#### 1) Management of multiple PCs simultaneously

- Before starting a class, just one command of Intel® vPro® booted up all PCs. Thus, time was not wasted. After a class, all PCs could be remotely turned off, eliminating the effort of manually operating them.



#### 2) Remote check of a PC's status to rapidly respond to a problem

With Intel EMA and Intel vPro technology the status of all PCs could be checked remotely so that rapid action could be taken to prevent problems. In addition, when hardware errors occurred, the event log of the Intel vPro platform helped us identify the cause.



## Conclusion

Lim Byeongjun, an IT teacher of Busan Computer Science High School said, "A student-centered customized education becomes of higher importance under this hybrid online/offline education environment caused by COVID-19. While teachers and students struggle to handle unexpected problems in the unfamiliar educational environment, the democratization of education becomes more difficult."

*"Intel EMA and vPro are very intuitive technologies. It is easy to use them and in particular their functions are essential for online education. With them, teachers and students can focus on classes and teachers can support students individually, even online, while protecting their privacy. Thus, students can successfully achieve class objectives. In addition, this technology significantly saves time for an IT teacher so that teachers can pay more attention to students."*

Busan Computer Science High School operates blended learning with online and offline classes, and its students and teachers are satisfied with the method. Blended learning can handle the difficulties students face in real-time so that the quality of remote learning is improved and that customized education is realized beyond face-to-face education.

