

Organization

The oldest technology-oriented university in Indonesia

Challenge

Bandung Institute of Technology planned to establish two data centers with 10G iSCSI connection for advanced cloud services. Connectivity, reliability and cost-effectiveness of the solution are the crucial aspects and main priorities for their implementation. Their goal was to build up a storage system that performs best in every condition and meets their SLA under a limited budget. The new solution had to meet the following requirements:

- High connectivity
- High reliability
- High scalability
- High performance
- Excellent price

Solution

Infortrend's ESVA E60 solution met the challenge with:

- Storage virtualization
- Large capacity that can be easily expanded
- Unsurpassed reliability
- Easy management
- Competitive pricing

Bandung Institute of Technology, Indonesia's oldest technology-oriented university, Deploys Infortrend's ESVA Solution to Expand Their Data Centers for Cloud Services



The Institute of Technology in Bandung (ITB), which was founded in 1920, is one of Indonesia's oldest colleges and one of the five Indonesian higher education institutions that has made it to world's top 500 universities. ITB is a first-rate academic university in technical fields and serves as Indonesia's technical education center, providing personnel for both the government and the private sectors. In addition, it also provides ongoing education for the teaching staff of domestic universities, and advises the government officials on matters of technology policy and development.

Being one of the Indonesia's top-notch higher education institutions, ITB is the pride of Bandung and it's also considered to be the top choice among Indonesia's high school students. After years of expansion and improvement process, it now has over 3000 employees at two different sites within Bandung city. To fully support the Internet and email box accessibility for each student and employee between these two sites, they established two different data centers and at the same time they found that they were going to need 10G iSCSI connectivity to expand their data center capability for delivering advanced cloud services.

As ITB's storage capacity and performance requirements for two new data centers have enormously increased, the original storage solution used by ITB was no longer able to meet their demand for higher data transmission speed and storage capacity. Therefore, ITB started to look for new storage solution which can be scaled easily in order to replace the existing infrastructure and upgrade its capabilities. Based on the purchase demand of ITB's IT department, PT. Mega Komputindo Lestari, Infortrend's major channel partner in Indonesia, recommended Infortrend's ESVA E60 solution. ITB's IT department tested the ESVA E60 solution to make sure the solution meets their harsh requirements. According to the excellent results of those tests, ITB decided to deploy the ESVA E60 solution to build up the storage system of the two data centers and replace the old one.

Customer Challenges *Reliability, Connectivity and Capacity*

To establish a datacenter is a costly investment for organizations, especially for educational institutions. Operating two districts at different locations around the Bandung city, the ITB's IT datacenter handled large amounts of data. Inevitably, as an educational institute, these data needed to be properly protected in order to preserve student records and other vital information. Also, to fulfill the growing data accessibility requirements from every student and employee, they needed to expand and establish two data centers at different sites. Their datacenters were designed not only to host mission-critical computer systems and associated components, but also to protect the critical core IT infrastructure of their education affairs and to have high standards for assuring the data transmission between the two sites. Therefore, except for the essential environmental controls like air-conditioning, fire suppression and backup power supplies, a high-speed data transmission connectivity is especially needed. To seamlessly bridge and connect these two datacenters, they needed over 10G iSCSI connectivity to achieve. While trying to ensure the smooth operation of the two data centers, they found the old storage systems could no longer keep up with the performance, capacity, transmission speed and availability required by the data of growing amount and importance from the two sites. With limited budgets, ITB was expecting a new storage system which can meet the following requirements:

- delivers high throughput power to handle heavy workloads and make quick responses to data queries from two different data centers
- provides more than 10TB of storage capacity and can be easily scaled to accommodate future data growth
- excellent price/performance
- centralized control and multiple platform support for data receiving and storage to reach an ideal cloud service structure

The Solution and Its Benefits:***Infortrend's ESVA E60 Offers Storage Virtualization, Easy Management and Expansion Options***

The ESVA E60 supports a high-availability IP SAN, allowing multiple servers to connect to the ESVA storage array and enabling ITB to centrally manage the storage solution. Infortrend's ESVA E60 is connected to multiple servers through different switches, which makes it achieve easy management and data sharing.

The ESVA E60 features storage virtualization technology, allowing storage space to be consolidated in a virtual storage pool. With thin-provisioning technology, capacity is flexibly allocated to different servers, increasing storage utilization. Owing to the efficiency ESVA E60 provided, ITB is currently considering adding another ESVA E60 model to its infrastructure.

Centralized Management with the User-friendly SANWatch Software

With the adoption of the ESVA E60, ITB's storage can now be centrally managed. Furthermore, management is enhanced by the user-friendly SANWatch software included with the E60. Capacity allocation and data protection can be completed in a few simple clicks, saving time spent on managing the storage and thereby freeing up manpower to deal with other aspects of ITB's IT systems.

Expansion Capability

ITB required a usable storage capacity of 10TB, and the ESVA E60 was able to easily meet this demand. If needed, the ESVA E60 can be expanded for increased capacity and performance. For more capacity, ITB has the option to add expansion enclosures, which could add as much as 100TB of storage capacity. The ESVA E60 also features scale-out technology, allowing users to increase performance by adding new ESVA systems to the current storage pool without any downtime. Load-balancing technology will automatically migrate the existing data to balance workloads across the environment and then continuously maintain the optimized performance by evenly distributing data blocks among member systems of the virtual pool. With scale-out, capacity can be expanded to hundreds of Terabytes.

***Overall Reliability***

One of the main advantages of Infortrend's ESVA E60 solution when compared to ITB's old storage solution is its RAID technology. This technology helps protect data even in the event of disk drive failures in the system. In addition, the ESVA E60 solution includes data protection features such as snapshot, volume copy/mirror and remote replication, allowing the university districts to create duplicates of the backup data. Combined with redundant hardware design that ensures system availability, the university districts can be sure of their data integrity and security at all times.

Data Sharing Ability

The ESVA E60 offers Cluster File System, which supports Windows, Mac and Linux systems. Support for different platforms enables easy data sharing among different sites in ITB. They do not need to worry about incompatibility issues and complex infrastructures whereby each user type needs to have a separate back-end storage solution.

Limited Budget

Cost was also an important consideration for ITB's IT department. The establishment of the two data centers was costly, so they aimed to significantly cut costs for storage solutions. The competitive prices of the ESVA solution helped swing the balance in Infortrend's favor, especially in view of ESVA's expansion capabilities that offer increased return on investment.

About Institute of Technology, Bandung

The Bandung Institute of Technology or Institute of Technology, Bandung (Indonesian: Institut Teknologi Bandung, abbreviated as ITB) is a state, coeducational research university located in Bandung, Indonesia. Established in 1920, ITB is the oldest technology-oriented university in Indonesia. ITB was considered the top choice among Indonesia's high school students in 2006 and has been credited as one of the most "prestigious" universities in Indonesia, together with University of Indonesia and Gajah Mada University. It's one of five Indonesian higher education institutions that has made it to world's top 500 colleges. The university is a member of LAOTSE, an international network of leading universities in Europe and Asia exchanging students and senior scholars. The ITB's main campus, lies to the north of the center of West Java, and its other campuses, cover a total area of 770,000 square meters.

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