UNIVERSITAS ISLAM INDONESIA

UII nurtures a new digital generation

Nutanix paves the way for Universitas Islam Indonesia's digitalization strategy

BUSINESS BENEFITS

A leading Indonesian university adopts Nutanix Enterprise Cloud to underpin its digitalization strategy. The benefits: heightened resiliency, accelerated rollout of applications, and a new role for the IT organization as a business enabler.

> **"Nutanix forms the core foundation of our digitalization strategy in UII. With its auto-recovery features, we are confident in achieving 99% uptime availability. Today, our team has the freedom to shift its focus from infrastructure operations to creating real business value to the university."**
>
> – CIO Dr. Mukhammad Andri Setiawan

INDUSTRY

Education

BENEFITS

- Speeded up microservices deployment from six months to three days
- Sharply reduced Kubernetes spin-up time down to 10 minutes
- Auto-recovery provided a high level of resiliency
- Confidence to achieve 99% uptime availability
- Increased value creation to the IT team, freed from infrastructure and operational issues

SOLUTION

Nutanix Enterprise Cloud Platform

- Acropolis Software, including built-in hypervisor, AHV
- Prism
- Karbon
- Calm

APPLICATIONS

- Kubernetes microservices
- Ceph
- Terraform
- Ansible
- Self-service, including IP mapping
- Snapshot scheduler
- Message broker
- Finance applications
- Admission competency testing and other academic curriculum-based applications

NUTANIX™
YOUR ENTERPRISE CLOUD

CHALLENGES

The Universitas Islam Indonesia (UII), one of Indonesia's leading private universities, has been rated as "best in country" by the Ministry of Higher Education. Established in 1945, today it has eight faculties serving almost 25,000 students.

Serious legacy issues required an IT revolution

Led by the visions of CIO Dr. Mukhammad Andri Setiawan, UII's IT organization is shifting to become an enabler for the university and a core driver to the business.

Dr. Setiawan's team was faced with a digitally-literate student body and a monolithic IT infrastructure that struggled to serve it. Applications were in many cases more than 15 years old and obsolete code was nearly impossible to update. Data was heavily siloed and fraught with inaccuracies. "If we wanted to know how many students we had, for example, we found that the answer depended on which information system we accessed," Dr. Setiawan explained. "Finance would say 25,000 students, academically the website would report it was something like 24,500. Data was mismatched because every information system back then was built in a siloed way and not integrated with each other."

The solution lay in a new digitalization strategy, which Dr. Setiawan started mapping out in 2016. It was a plan that he described as *revolutionary* rather than *evolutionary*.

Microservices: essential but tedious to deploy

At the heart of the strategy was a shift to a microservices architecture. With the codes for many legacy applications long since lost, the team decided to re-code everything in the new environment.

Dr. Setiawan describes the microservices modular plug-and-play approach as promising but, in practice, challenging. "Deploying microservices was not so simple. We needed to create a CI/CD pipeline which, using legacy infrastructure, was taking about six months to pull together," he said. "To be honest, setting up that pipeline, finding the correct software and managing all the storage, was really exhausting."

SOLUTION

On the recommendation of a peer from another university, Dr. Setiawan and his team assessed Nutanix for a hyperconverged infrastructure. After a successful PoC, the university selected Nutanix in 2018 and now runs a hybrid cloud model with its own private cloud formed by two-sites running Nutanix infrastructure with data replication between them.

A Nutanix cluster runs the university's CI/CD pipeline including Kubernetes microservices, Ceph, Terraform, Ansible, remote admission competency testing and other academic applications, finance applications and a number of peripheral applications. The university started using VMware vSphere and ESXi hypervisor, but is now transitioning to the Nutanix AHV Hypervisor, in part to save on licence fees. The university is also an early adopter of Nutanix Calm for app-level orchestration and Karbon for simple Kubernetes deployment and operations. It also relies on Prism, which is part of Acropolis, for single-click infrastructure management.

The IT Team is currently rewriting all of its legacy applications as cloud native apps, moving them onto Nutanix as soon as they become available.

CUSTOMER OUTCOME

Microservices deployment from six months to three days

One conspicuous benefit of the Nutanix environment is the speed of microservices deployments, according to Dr. Setiawan. "The hardest part now is creating the scenario. Once you have the scenario, just simply click it. That's it," he said. "The execution is really fast. It is down from six months to about two to three days."

Sharply reduced Kubernetes spin-up time to 10 minutes

According to Nashihun Amien, DevOps Engineer in Dr. Setiawan's team, "I can spin up Kubernetes faster than manual builds with Kubeadm or Rancher. Previously I needed half a day to spin up a single cluster but now, with Karbon, I can spin up a Kubernetes cluster in less than 10 minutes.," he said. "I love Karbon the most of all, it definitely enhances my team in operations and R&D.."

A high level of resiliency from auto-recovery

The Nutanix recovery feature has won friends in UII's IT team. "When one node unexpectedly goes down, it will simply move to the next node automatically," said Dr. Setiawan. "This helps the team a lot, especially during disaster recovery scenarios."

This was most recently experienced when a staff member mistakenly switched off the electricity supply to the data center. "That took down some of the servers," Dr Setiawan said. "If we compare the Nutanix performance with the rest of the servers that we had, including Dell and Apache, there was a big difference. Amongst all those servers, Nutanix really kicked off to give an immediate failover recovery."

Operational simplicity

"Prism Central helps the team to spin up a virtual server faster and have clear operational insight into the cluster. As a DevOps team, we can create ready-to-use templates so the developer can focus on the code," said Amien. "Compared to other solutions, I can say Nutanix is doing really great work in this area."

Confidence in 99% uptime availability

Historically, the UII IT team worked to a 98% uptime SLA. With Nutanix, his team is now confident of meeting 99% uptime availability.

A new focus: adding value

Finding staff with the skills to manage the university's CI/CD and its legacy infrastructure used to be a headache, and Dr. Setiawan said there was disruption when they left the team. With Nutanix, the technical barriers have been substantially lowered.

"The team now uses Nutanix to manage everything, and I can shift the focus of my team elsewhere," he said. "We are on a really big digital transformation. We need someone catering for video management. We need someone managing online learning, and so on. By shifting the focus to those areas, we can actually do a lot of things that we couldn't do before. We don't have to focus on the infrastructure anymore. I mean, we let it be done by the Nutanix software."

More time to nurture a new digital generation

Dr. Setiawan's team's mission was simply to deliver technology. With Nutanix displacing much of the operational overhead, the team now has an additional task: teaching.

"Previously, we didn't have the role of teaching staff and students how to use the technology," Dr. Setiawan explained. "That's changed. Every two weeks now, we have something called the UII Academy. We're basically teaching people how to use Google Sheets and Google Docs. Those are skills they can use in lectures, assignments, and everywhere else."

NUTANIX™
YOUR ENTERPRISE CLOUD

Great support from the Nutanix service team
UII's IT team has experienced some very swift responses to its Nutanix service queries. In some cases, staff have asked questions outside business hours and received a reply within a few hours.

"It's a good experience that is creating a bond actually, because we feel that even though we don't subscribe to the highest level of Support Services SLA, we're getting a high level of response," Dr. Setiawan said. "It's beyond the expectations of our engineers as well."

NEXT STEPS

Over time, the UII IT team is rewriting more of its legacy applications and moving them onto Nutanix, with the goal of eventually running all 50 apps on Nutanix.

Work is also underway to swap out hypervisors from VMware ESXi to Nutanix AHV, and to connect between Google Cloud Platform and Nutanix clusters.

NUTANIX™
YOUR ENTERPRISE CLOUD

T. 855.NUTANIX (855.688.2649) | F. 408.916.4039
info@nutanix.com | www.nutanix.com | @nutanix