University Rapidly Deploys Pandemic Remote Access Solution to Facilitate Teaching and Learning for 41,000 South African Students During Lockdown

Industry
Higher Level Education

Company
The University of the Free State (UFS)

Challenge
Securely expand remote access capacity with little time, no onsite access, and a limited budget

Answer
The combination of KHIPU Networks professional services and Palo Alto Networks virtual products

Results

• Within 24 hours (and remotely) conducted systems analysis; drafted requirements; created a rapid design; developed solution; integrated systems; and began testing

• Saved approximately $1.2M (or 65% savings) over traditional security and connectivity solutions

• Overcame ISPs' reluctance to help with integration of Learning, Examination, and Research SaaS by means of reverse billing and zero–rated services

• Operationalized entire campus and provided secure remote access to staff and students within 48 hours

• Future proofed remote access platform, supporting the change to anywhere learning

Products and Services

KHIPU Networks, a PAN Certified Partner

• RAPID design, project management, systems integration, testing, and implementation

• KARMA Proactive Support

• VM–series (all subscriptions)

Palo Alto Products

• DNS Security, Premium Support, GlobalProtect, Threat Prevention, Wildfire, URL Filtering (PAN-DB)

• 1x 850, 2x5220, 5x3220, 6x3250, 2x3260

• Panorama + Log Collectors (M–600), VM700

Organization

The University of the Free State (UFS) provides many opportunities to scholars and faculty who go on to make significant contributions both locally and globally. Operating for the past 115 years, in the center of South Africa and surrounded by largely rural communities, students are offered degrees in business, economics, education, health, humanities, law, sciences, and theology with 57% of students qualifying for government assistance.

Ensuring Viability of a Long-Established University with New Pandemic Requirements

"In 2014, UFS was experiencing difficulty with VPN scalability and performance as the campus expanded. With the advent of the global pandemic and stay-at-home mandates, the need to solve the problem became of the upmost priority," explains Louis Marais, head of systems, platforms & networks for ICT Services, UFS.

"Shutting the university, even for a limited time, was not an option. Many students are pursuing life-changing degrees and do not have the flexibility to start and stop their education. And the university could not bear the financial burden of discontinuing classes and research," adds Marais.

UFS had to quickly come up with a solution in the most cost-effective way possible. To do so, UFS turned to their long-term strategic partner, KHIPU Networks (a certified Palo Alto Networks Professional Services partner) and Palo Alto Networks (PAN) products.

"It is important to locate a professional services partner who not only knows your environment but also understands what solutions can address your challenges.

With cybersecurity implementations, you do not want to have multiple partners, as that increases the exposure of strategies outside the organization. We have had a successful relationship with KHIPU for over six years and KHIPU had demonstrated their deep understanding of PAN products," says Marais.

The engagement goals included:

1. Operationalize the entire campus for remote learning by April 20, 2020 (i.e. 48 hours from start)
2. Provide a simple and cost-effective solution
3. Integrate learning and research SaaS applications
4. Improve scalability, performance, and security
5. Deliver a solution that requires no onsite engineering or hardware

As KHIPU and UFS engineers rapidly completed the investigation and design phase they knew that the VPN design, coupled with ISP bandwidth issues and the current legacy systems, would continue to make it difficult to balance remote students' and faculty members' productivity and security.

Quickly Solving Remote Access Issues

To solve the scalability and access restriction issues, KHIPU and UFS deployed the PAN VM-Series Next-Generation Firewall solution (remotely). This, in turn, provided a stay-at-home work environment for 41,000 users and a scalable long-term security system with a solid return on investment.

To make certain of no delays, KHIPU worked with PAN to acquire the needed licenses and appliance and secure a 30-day extension of a PAN trial while the university waited for the required purchase orders.

A Deployment Complication and an Innovative Fix

After identifying all possible employee-owned mobile devices including laptops and iPad security configurations, the engineers designed the required URL Filtering objects as well as App-ID rules. With an already established PAN GlobalProtect Gateway license, the university was able to use both the mobile and desktop VPN applications while ensuring compliance with network security policies.

The new system even allowed students to use one URL and their current university credentials to access the VPN. However, UFS did face a challenge where some students did not have internet access away from campus.

To address this issue, and as part of a broader project, the UFS IT leadership worked directly with the ISP's to allow for zero rated and reverse billed URL's, providing students with access to the VPN at no cost.

While it was not easy to get the local ISP's to agree (as it moved students away from expensive mobile data packages), UFS leaders were persuasive and even paved the way for other South African Universities.

Results that Exceed Expectations

KHIPU and UFS engineers investigated and implemented a superior connectivity solution when compared to the expensive ISP's data bundles- at warp speed. In addition to improving connectivity and remote access performance, students can connect to the university via the VPN without an internet plan. Students can therefore access educational material anytime, from anywhere, at no cost.

"The project was a success for both UFS and KHIPU, demonstrating our capabilities to remotely commission complex solutions within hours. And due to high mobile data costs in South Africa, the new Palo Alto Networks virtual appliance paid for itself in 15 days," states Matt Ashman, Co-Founder and Chief Commercial Officer, KHIPU Networks.

"One unexpected, but valuable benefit, comes from the rich reporting feature. PAN traffic reports provide details on what devices and operating systems are being used by students and staff. Armed with this information, the university is able to tailor the learning materials for the correct devices and operating systems."

— Louis Marais, head of systems, platforms & networks for ICT Services, UFS

Corporate Social Responsibility

UFS subscribes to the "no student left behind" philosophy, and takes a concerted effort to help their students, including holding drives to provide laptops for those in need.

KHIPU Networks continues to help other South African Universities with their remote access needs.