

Customer Success Story: STT Connect

Creates a Distinctive Web-Scale Cloud Offering with Software-Defined Technology



Private cloud enabler defies conventional builds to power up its infrastructure with Big Switch solutions

ST Telemedia Connect (STT Connect) is a Singapore-based private cloud enabler committed to build a best-in-class, secure infrastructure, and deliver a web-scale cloud offering that meets the most stringent requirements.

With physical platforms hosted in ST Telemedia Global Data Centres (STT GDC)'s Tier 3 facilities, STT Connect integrates some of the industry's best technologies. Taking a non-traditional approach, the company selected open source and software-defined technologies to build a modern, private cloud, ready for current and future systems and applications.

Building any technology business from the ground up is both "a luxury and a challenge," says David Robinson, Chief Technology Officer of STT Connect. "When we set out to build our private cloud business, we outlined three customer-focused tenets to abide by," Robinson says. "One, the foundation must be secure. Two, it must be managed in an automated way. And three, of course, it needed to be high performing today and tomorrow." Guided by these principles, Robinson and his team made a strategic decision to embrace open solutions, and to have everything software-defined.



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Chief Technology Officer of STT Connect

CHALLENGE

- **Deliver a best-in-class, future-ready cloud offering:** Build web-scale cloud that meets the most stringent requirements in the shortest time
- **Build a model architecture:** Establish a secure, automated and high performance environment that could be implemented globally
- **Meet certification requirements:** Meet strictest standards for security, availability and transparency

SOLUTION

- Big Cloud Fabric
- Big Monitoring Fabric
- Red Hat OpenStack
- Dell Open Networking Hardware

RESULTS

- **Fast time to revenue and customer response** with an agile and scalable enterprise-class offering
- **MTCS certification** verifies network security and transparency
- **No vendor lock-in and compatibility to current and new technologies** by incorporating open networking contributions
- **Solution repeatability** that allows cloud platforms to be stood up consistently and quickly, globally

With superior automation and flexibility in mind, David and his technical team wanted to manage the environment via API as much as possible, which led them to look at OpenStack. After setting up an OpenStack cloud, they decided to add an enterprise-class software-defined networking (SDN) solution to further advance its private cloud offering.

The team considered various commercial and open source options before picking Big Switch Networks' Big Cloud Fabric (BCF) and Big Monitoring Fabric (Big Mon). The result: superior scalability and visibility.

A Vision that Passes the Test

David shared, "During our research Big Switch showed strongly. After meeting with the engineering team, we were impressed by their high level of confidence in the company's vision and product. Following tests on multiple vendors and solutions, Big Switch emerged as the best suited solution for our needs."

"From an OpenStack perspective, Big Cloud Fabric replaced the native network components. What really stood out compared to other SDN providers, Big Switch puts engineering first," he continues, "that being said, the only concern we had upon completing the product training was that Big Switch products looked too simple."

STT Connect was told this is something the company hears often, to which it responds, "BCF is designed to be simple, but powerful," and according to David, "it is."

Rapid Deployment and Faster Customer Response

After completing a proof-of-concept project, STT Connect quickly added Big Cloud Fabric and Big Monitoring Fabric in their high availability and fully redundant data center facilities, and rolled out its first private cloud solution in less than six months.

Currently, the company's web-scale cloud is offered to multiple customers in Singapore. With plans to expand to other markets in the near horizon, STT Connect intends to also use Big Cloud Fabric and Big Monitoring Fabric as part of its model architecture for overseas locations.

"Response for our optimised infrastructure has been good, and we are quickly expanding our platform to meet market demands. Tapping on Big Switch's cutting edge tools, we have simplified our service management process and boosted our scalability. This allows us to be highly responsive to our customer needs while upholding tight security controls – something critical to us as we manage a private, multi-tenant cloud."

Troubleshooting and beyond

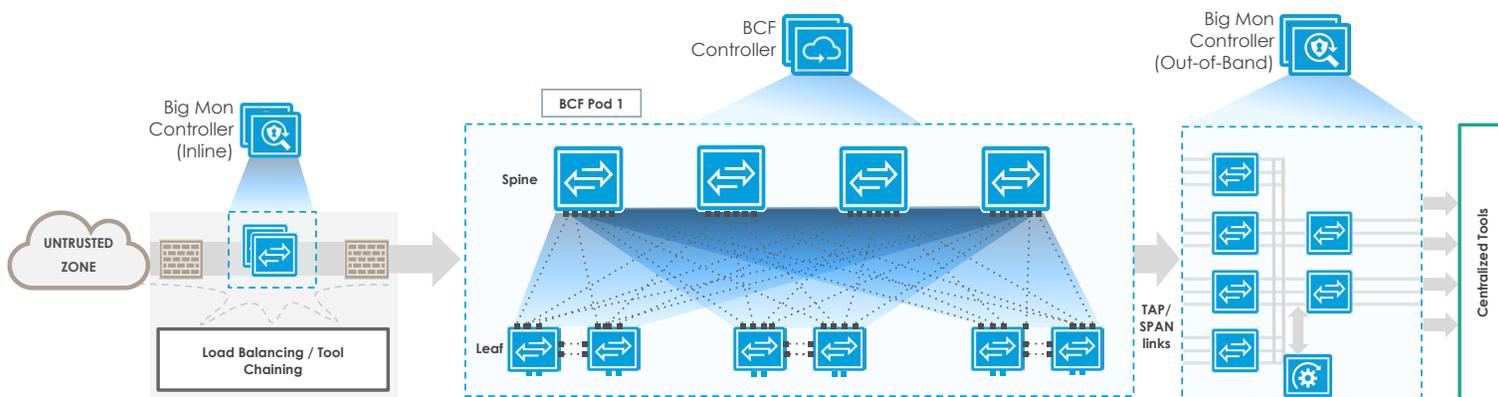
Another enhancement is pervasive visibility across the cloud networks, and the ability to address issues quickly and easily.

"When auditors or our customers asked how we guarantee visibility into the network, we were able to show them easily with our Big Switch environment. Its 'single pane of glass' shows where the traffic went (through fabric trace-path), how isolation is achieved, and allows us to go into detailed logging and troubleshooting. This proactive approach allows us to quickly identify any potentially nefarious network activity and stop it in the moment" explained David.

David is particularly enthusiastic about Big Switch's troubleshooting modules. "Now when we have a problem, we can easily visualize where the problem is and quickly isolate it. This is an important capability that will become even more critical in the near future. Networking has become ubiquitous and behind-the-scenes, and will get to the point where it 'just runs'. I think we're still a few years away from that, but with software-defined networking, we have taken a big step towards that and are ready for the future."

A Certified Boost

The visibility that Big Switch provides into the network has also helped STT Connect meet some of the Multi-Tier Cloud Security (MTCS) SS 548 advanced requirements for security, network isolation and physical isolation. As the world's first cloud security standard that covers multiple tiers of cloud security, MTCS is defining Singapore's risk management and security practices for cloud computing, transparency and accountability in the cloud. STT Connect's bespoke private cloud infrastructure is recognised on Level-3, the highest tier, which certifies its solutions are appropriate for government, and enterprises with critical applications and infrastructure requirements like healthcare and finance. Achieving this industry endorsement stands STT Connect amongst the global cloud giants.



Software-defined: The only option for modern networks

In retrospect, David and his team took bold moves in creating a private cloud infrastructure that defies conventional builds to meet their requirements, and are happy with the outcome.

He shared, "We couldn't have achieved what we wanted to do with traditional network gear and design. To avoid vendor lock-in and ensure compatibility to current and new technologies, we have avoided proprietary solutions where possible because we don't want to get to the point of vendor lock-in. All of us on our network team have been around long enough to know the pain of being tied to a single vendor with a network that's very hard to troubleshoot."

In deciding to embark on an all-in SDx approach, the STT Connect team was challenged to rethink networking. Robinson shares that Big Cloud Fabric "replaced the idea of traditional infrastructure that we would have put in. It didn't physically replace anything, per se, but we had to overcome the initial hurdle of people's pre-disposed ideas as to how the network had to be set up."

When asked if there was any difficulty promoting a software-defined vision, Robinson states that senior executives bought into the plan quickly, but the network engineers had some reservations in accepting the software-defined vision because, "we changed their framework of reference, to them, this is how they've always done it, trying to change that and to instill a DevOps mindset into hardcore network engineers was probably the hardest thing we had to overcome. To them, software is at the virtualization level, not the network level, it took them some time to get there, but they did and given the results, we are not looking back."

Having established a reference architecture, STT Connect will repeat it globally, which includes incorporating BCF and Big Mon in each location. He sums up, "We've been very satisfied with Big Switch. What really impresses me is the tech and engineering depth they've demonstrated. From a CTO perspective, that's very important because when we ring up the company with questions, which we do, we have the utmost confidence that the people at the other end of the line know how to get an answer quickly. We have a great relationship with Big Switch, and it's one for the long-term."



Big Cloud Fabric (BCF) is a next-gen data center switching fabric inspired by the design principles hyper-scale operators like Facebook and Google have developed to build intelligent, agile and highly flexible network architectures. It leverages SDN principles to architect a redundant logical switch architecture consisting of hundreds of switches and delivers intent-based networking workflows to streamline and accelerate IT operations. Customers benefit from unprecedented application agility due to automation, order-of-magnitude operational simplification due to SDN management, deep visibility through built-in telemetry and analytics and significant cost reduction due to hardware/software disaggregation.

Big Cloud Fabric supports all workloads via built-in integration that includes, VMware SDDC, Red Hat OpenStack, and container environments, such as Docker, Kubernetes, Red Hat OpenShift and Mesosphere. BCF can be deployed in existing data centers as a new pod or can interact with traditional networks. The scale-out fabric operates like one redundant logical switch, is fully resilient with no single point of failure, and supports headless mode operations.

To learn more about Big Cloud Fabric, register for BSN Labs to get hands-on experience via our self-paced labs modules. To register (it's free): <http://labs.bigswitch.com>