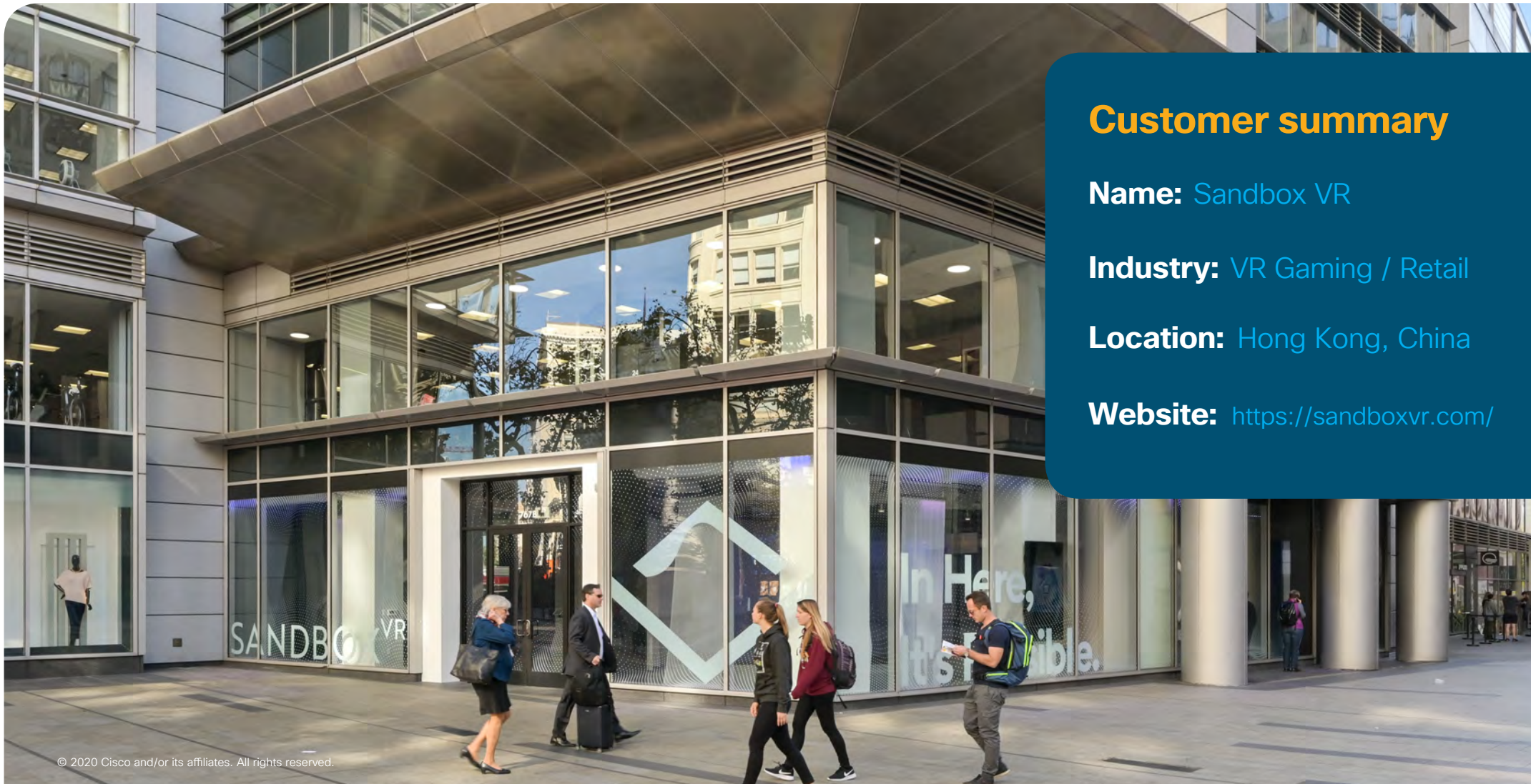


Sandbox VR Case Study

Cisco Meraki puts Sandbox VR on solid ground



Customer summary

Name: Sandbox VR

Industry: VR Gaming / Retail

Location: Hong Kong, China

Website: <https://sandboxvr.com/>

Technology pain points

- With its consumer-grade routers, Sandbox VR encountered frequent network disconnections – a major issue when running a highly immersive, hyper-reality gaming environment using full-body motion capture.

Solution

- Cisco Meraki, an enterprise-grade networking solution, is specifically designed to cater the requirements of SMBs for a very stable, high-speed network with real-time dashboard for network usage visibility.

User benefits

- Stable network and high performance: Cisco Meraki solution enables Sandbox VR to provide a seamless VR experience by running a stable network. Cisco Meraki continued innovation aligns with Sandbox VR ever changing VR gaming technology.
- Zero-touch provisioning and central management with high visibility: Cisco Meraki is a plug-and-play solution, making installation quick and easy for Sandbox VR. Single management dashboard for the entire infrastructure streamlines devices monitoring and simplify for Sandbox VR the worldwide operation of its offices centrally and remotely.
- Unlimited Scalability: Cisco Meraki is one of the largest cloud managed solution with more than 200 million clients connected worldwide. Sandbox VR is able to better deploy resources for business expansion. With its worldwide availability, the company – when doing business expansion – can order the hardware anytime and get the on-site support anywhere.
- Reduced cost: Because it is a cloud-based platform, costs on IT maintenance and manpower allocation have been largely reduced.
- It simply works. With Cisco Meraki, Sandbox VR can now focus on its own business critical applications and projects. Network infrastructure is no longer business burden but helps Sandbox VR connect to more business opportunities.

Hong Kong-based virtual reality startup Sandbox VR has the lofty ambition of creating a truly immersive gaming experience that puts the player right in the middle of the action as if he has just jumped into an alternative universe. In a nutshell, its founder Steve Zhao has created the closest thing to the famed “Holodeck” from the Sci-Fi series Star Trek where players live and breathe the narrative of the game.

Sandbox VR opened its doors in June 2017 on the 16th floor of a back alley high rise in Hong Kong. It had an ominous start with bookings coming in trickles. With a month left on its borrowed time, a video posted of Facebook narrating the Sandbox VR experience went viral and has been viewed half a million times to date.

Today, Sandbox VR has nine stores in Asia and North America, including Hong Kong, Jakarta, Macau, Singapore, Los Angeles, San Francisco and Vancouver. And it is still expanding. Its portfolio of games now includes *Amber Sky 2088*, *UFL: Unbound Fighting League*, *StarTrek Discovery Away Mission*, *Deadwood Mansion*, and *The Curse of Davy Jones*.

In early 2019, it garnered a significant US\$68-million Series A funding from investors, including Andreessen Horowitz, Alibaba Entrepreneurs Fund, CRCM Ventures and Stanford University.



“Meraki's cloud configurability allows us to quickly deploy and resolve issues as we aggressively expand the Sandbox VR footprint into new countries around the world.”

- Kimkind Yeung

Head of Core VR Technology at
Sandbox VR

Challenge: Unreliable network connection threatens customer experience

With Sandbox VR growing from strength to strength, the company is under constant pressure to provide a consistently immersive, real-time VR experience that gamers expect. This means that the company must have a high-capacity and scalable network that delivers uninterrupted connections.

“VR devices require stable, fast and high-capacity network connections to process a large volume of graphic and motion data,” said Kimkind Yeung, Head of Core VR Technology at Sandbox VR. “We have tried a number of consumer-grade routers but none of them could meet the requirements of running the VR devices, as they frequently got disconnected from the network. The problem was the firmware in these routers were not stable.”

Players carry a backpack computer on their back with motion sensors attached to different parts of their body. On average, more than 2,500 gamers come to Sandbox VR's retail stores to experience its VR world every month, and the company cannot afford to tarnish that experience with an unreliable network.

“We need the systems to communicate the game logic and the positional data from the motion capture,” said Yeung, the engineer who worked with Zhao on Sandbox VR's first ground-breaking game.

“One of our core elements is a motion capture system that provides the full-body tracking. Everyone is moving their limbs in the virtual world. To make this a high-quality and immersive experience, we need a low latency and reliable network. The consumer-grade routers just can't cut it,” he said.

Furthermore, it is not only the gaming floor that demands an always-on network. Different teams overseeing various aspects of Sandbox VR's business put a lot of pressure on the network. These include the in-house game development team, the R&D team, the hardware design team, the retail design and operations and the franchise management team.

“Network management was a challenge not only in the VR environment but also in our backend,” Yeung said. “We have to ensure that our developers' productivity is not impeded by an unstable Internet connection.”

The company has over 100 employees at its backend offices and retail stores worldwide. And while its front-end staff have some technical knowledge in how to operate the VR environment, it takes an IT support staff to make a non-working router runs again.

In many instances, Yeung said company resorted to just buying a brand-new router when an existing one breaks down just to save time and ensure network problems does not get in the way of customer enjoyment of the Sandbox VR experience.

Choosing a technology partner you can trust

In October 2018, Yeung decided that their existing routers needed to go, and like many before him begun their search online for the most suitable router for his business.

“When I came to the conclusion that we cannot scale our network to support our growing operations with consumer-grade routers, Cisco instantly came to mind,” Yeung said, adding the online customer support was quick to ascertain Sandbox VR’s requirements and promptly gave a recommendation.

The Cisco online customer support recommended Cisco Meraki, a plug-and-play solution designed specifically to cater to the needs of SMBs such as Sandbox VR.

To date, Cisco Meraki have been deployed in almost all Sandbox VR retail shops and backend offices worldwide, except in Indonesia.

After a few teething problems that came with the unfamiliarity of using the Cisco Meraki solution, Sandbox VR now has a network with the power to scale quickly to cater to future requirements.

“The Cisco Meraki solution offers us a very stable, high speed network and real-time dashboard for network usage visibility,” Yeung said. “It is easy to use – the quick and easy installation is a huge convenience for us.”

Cisco Meraki empowers business expansion

After more than half a year since switching to Cisco Meraki solution, frequent network downtime because of an unstable router went away. And Sandbox VR is reaping additional benefits from using an enterprise solution packed with features designed for easy and simpler network management.

According to Yeung, with Cisco Meraki being a cloud-based platform, it enables Sandbox VR to better deploy resources for business expansion.

“When we need to deploy the games in a new store, we do not need a lot of technical people. We only need to reconfigure the routers in the cloud, we can just copy the configuration settings of one store into another. It will help us expand to other countries quickly to capture business opportunities,” he said.

This ability to duplicate the network settings via the cloud also helps Sandbox VR development team who are located in two separate testing sites, Yeung added.

With its remote accessibility feature through the cloud, Cisco Meraki also enables the VR company to save on maintenance costs.

“As installing and running Cisco Meraki solution is easy, costs on IT maintenance and manpower allocation have been largely reduced. We do not need a team of people but only one person to monitor the network,” Yeung said.

Meanwhile, the worldwide availability of Cisco Meraki solution also ensures that future network expansion for Sandbox VR to be hassle-free.

“We can order the hardware at anytime and get onsite support anywhere,” said Yeung.

Already, Sandbox VR is looking into another Cisco Meraki solution to fortify its network. It is currently keen to conduct a proof of concept of Cisco’s next-generation Wi-Fi 6 (802.11) solution.

“We still need improvements in our network and when you are running a wireless network no one can guarantee that the signal is perfect. So, this is something that is up on our drawing boards in terms of technology roadmap.”

“What’s more, with Cisco Meraki, we will be able to conduct a seamless upgrade to Wi-Fi 6,” he added.

For more information about Cisco, please visit www.cisco.com/hk and <https://meraki.cisco.com>

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