“Smart” cloud migration in a hurry: How NOV accelerated its work-from-anywhere rollout

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National Oilwell Varco — more commonly known by its acronym NOV — supplies technical equipment and services to the global oil-and-gas industry. NOV is a Fortune 500 company, and CIO Alex Philips espouses the company’s informal mantra: “We power the industry that powers the world.” Philips’ commitment to that mission was put to the test when the entire company had to move to remote access.

Getting used to doing more with less

Philips and his IT team are no strangers to dramatic business shifts: NOV’s fortunes are inexorably tied to fluctuating global commodities markets. After oil prices plummeted in the mid-2010s, Philips and team faced a straightforward challenge: Do more with less. Much less.

They sought to reduce the burden of legacy technical debt and lower historically high costs, while simultaneously adding more capabilities and improving security for their worldwide organization. NOV began its transformation in 2016 with a shift to the cloud, away from what Philips describes as “security appliance hell.”

NOV invested in Zscaler Internet Access (ZIA) and introduced (secure) local internet breakouts for its employees. The move was pragmatic: ZIA provided an optimal secure access service edge (SASE) model that optimized SaaS access, and in particular, helped accelerate its Microsoft 365 rollout. NOV replaced legacy hardware-based security appliances, saving the company money, delivering better security, and improving user experience. Philips describes this transformation as a “smart cloud usage approach”: moving NOV to the cloud where and when it made sense and on NOV’s own terms.

ZIA served NOV’s need for direct connectivity for internet egress and validated Philips’ commitment to “smart-cloud” migration. But there was still considerable data traffic going to its corporate data centers. In 2018, Philips and his IT stakeholders began rolling out Zscaler Private Access (ZPA) to secure remote access to internal applications.

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Alex Philips, Chief Information Officer, National Oilwell Varco
“When COVID-19 broke out, we had to start thinking differently. How are we going to adapt?” says Philips. “Our China facilities were shut down…and we were really concerned: What’s going to happen if this goes worldwide? What do we need to do? How do we need to prepare?”

In February 2020, Philips assembled his now-remote team. They all expressed confidence in NOV’s ability to respond to the crisis. “They said, ‘Alex, I think that we’re okay,’” says Philips. “We’ve moved to ZPA, and Zscaler can handle this for us.” The quickly-spreading pandemic meant that NOV was going to have more users using ZPA than they had ever had.

With Zscaler’s assurance that its globally-distributed SASE cloud could accommodate NOV’s secure-remote-access traffic volume, Philips updated his peers: “I was able to go to my leadership team and say all 27,500 of our users, if they need to work remotely, they can do it.” As for the execs, says Philips, “they were absolutely stunned.”

The work-from-anywhere call to action: How a pandemic changed everything

“My team’s job is to enable our amazing colleagues to access their mission-critical applications and data securely anytime, anywhere, on almost any device,” explains Philips. And with NOV’s responsibility to “power the industry that powers the world,” preserving business stability was essential. “Being a critical supply chain partner to the energy industry means continuity is not a buzzword or checkbox,” he says, “but a necessity at all times.”

With a broad base of operations and 600+ offices, NOV was particularly vulnerable to global market ramifications of the coronavirus outbreak. Operationally, Philips and his IT team suddenly had to support a drastically different new reality: 27,500 employees around the world all needing remote access to work from anywhere. Immediately.

NOV had one major advantage in coping with the challenge posed by having to shutter offices. It’s inaccurate to suggest anyone was actually “prepared” to respond to the global pandemic of early 2020, but NOV’s investment in ZPA set the stage for the company’s shift to remote access.

“NOV’s legacy on-prem remote-access solution was designed to handle up to 2000 users at any one time, volume that had only been neared during regional weather events like an ice storm or flood. Moving to ZPA opened up a world of future capacity.

ZIA and ZPA brought a new level of security to NOV connectivity, enabling protected remote access (for both employees and third-party contractors) and comprehensive inspection of incoming and outgoing SSL/TLS-encrypted data. “Many of our users work outside of our network,” notes Philips. “With Zscaler, we were able to deploy [the Zscaler Client Connector] on all these endpoints and those users were protected no matter where they were.”

Creating a “desktop-based mobile workforce”

With remote-access readiness confirmed, Philips and team recognized an unexpected challenge. Sending employees who used laptops home would be practical enough, but some thirty percent of the company’s staff (engineers in particular) used powerful desktop machines. Often, these desktop systems contained expensive or proprietary software, making it harder to take work offsite.

The NOV CIO had to “face the reality that our engineers would have to take their engineering systems home with them to continue working — How are they going to connect back to corporate resources?” Many of the desktops lacked Wi-Fi capabilities, and few were equipped with the software to access needed remote resources.
“We quickly had to push out the ZPA client and instruct everyone ‘Okay, take a long ethernet cable home or go grab a USB Wi-Fi adapter,’” says Philips. “We did this in a couple of locations, and it worked very, very well.” Philips and team found themselves in an unexpected new operational environment: “That was a huge learning for us. Desktops would now be part of our mobile workforce, which we had never planned for or imagined. BYOD in reverse.”

“We have seen the number of ZPA concurrent user connections increase 4.5X over a sixteen-day period,” notes Philips, who has seen operational performance spikes with more than 9,000 NOV employees connecting to corporate applications and data resources simultaneously.

“Zscaler was able to adapt quickly and increase capacity to more than satisfy our needs,” says Philips. “As employee feedback from around the world has come in, I’m hearing exactly what I had hoped: ‘It feels normal.’” For Philips, that response from NOV employees validates the company’s secure cloud migration. As he notes, “That’s very high praise considering the disaster we would have felt using our old solution!”

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Concludes the CIO, “We’re extremely excited about what lies ahead for us, and how we’re actually helping prepare for our Zero-Trust journey. We have proved our employees can operate without being on the same network as their resources!”

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“Figure 6-2. NOV increased its remote-access Zscaler workload more than fourfold in only sixteen days.”

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About Zscaler

Zscaler was founded in 2007 on a simple but powerful concept: As applications move to the cloud, security needs to move there as well. Today, we are helping thousands of global organizations transform into cloud-enabled operations.

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