First established in 1993 as a local oil and gas company, Emirates National Oil Company Limited (ENOC), a wholly owned company of the Government of Dubai, has grown to become a leading global player operating across the entire energy value chain.

Committed to economic diversification and sustainable development, the group now comprises more than 30 related subsidiaries spanning refining, lubricant blending, storage, aviation, and retail.

To serve its many thousands of customers across 60 global markets, the organization employs over 9,000 staff in more than 400 separate locations.

The Need for Digital Transformation

To support the ongoing business operations of an organization of this scale requires fast, secure, and reliable companywide access to an increasing number of diverse IT applications and services running both in-house and in the cloud.

Until 2021, this access had been provided for ENOC via a managed networking service based on MPLS, configured in a typical hub and spoke architecture in which the entirety of each branch’s external traffic passed through a single link to the central data center.

This architecture had satisfied the need for basic connectivity, and some security controls had been applied centrally at the hub. But it lacked the performance, reliability, and scalability to support the group’s ambitious plans for growth.

To remain competitive and to continue enhancing customer experience through digital innovation, ENOC required the introduction of new services with network demands beyond the capabilities of the existing infrastructure.

Part of the problem was that as more of the group’s critical applications and services moved to the cloud, the unnecessary backhauling of this traffic through the data center was impacting user response times, decreasing efficiency, and ultimately limiting the level of service provided to ENOC’s customers.

Also, without back-up connectivity to the branches, occasional but inevitable link failures were leading to unacceptable downtime windows, degrading customer service and consuming valuable time and resources of the IT department.

“We needed a faster, more resilient infrastructure with deeply embedded advanced security, but we also needed to do this within budget and without increasing management complexity.”

– Mohammed Al Rais, CIO, Emirates National Oil Company

Details
Customer: Emirates National Oil Company (ENOC)
Industry: Retail
Location: United Arab Emirates
Number of SD-WAN Locations: 400+
Another major concern was security. To keep pace with the evolving threat of cybercrime, additional protection measures, such as data encryption, would need to be layered on top of the existing infrastructure, adding expense, complexity, and further reducing performance.

**Building the Foundations for Growth**

As part of an AED (United Arab Emirates Dirham) 250 million investment plan starting in 2021, the group launched a digital transformation strategy focused on placing the customer at the center of the business and enhancing the overall service experience. For Mohammed Al Rais, CIO at ENOC, this meant a radical overhaul of the entire IT network and security infrastructure.

“We needed a faster, more resilient infrastructure with deeply embedded advanced security,” explains Al Rais, “but we also needed to do this within budget and without increasing management complexity.”

The obvious technological solution to their wide-area network challenges was to deploy a software-defined WAN (SD-WAN) that would preserve the privacy of ENOC’s private MPLS network, while enabling faster, lower-cost internet, and direct cloud access at each of the 400+ remote sites.

But with SD-WAN traffic no longer necessarily passing through a single central security point, the wider potential attack surface would need to be carefully addressed through a centrally managed, yet remotely applied set of security controls.

**Fully Integrated Networking and Security**

After evaluating a shortlist of potential suppliers, ENOC chose the Fortinet Secure SD-WAN solution based on the FortiGate Next-Generation Firewall (NGFW).

“There were several product combinations that might have met most of the technical feature requirements on our list,” recalls Al Rais, “but only Fortinet had the deep integration to create a single, secure, and manageable SD-WAN infrastructure.”

With advanced SD-WAN capabilities integrated into the industry’s best-performing NGFW, Fortinet Secure SD-WAN also benefits from simplified, single-console management through FortiManager for all networking and security needs.

By maintaining a sufficiently granular awareness of the real-time state of all network paths, Fortinet Secure SD-WAN can intelligently reroute traffic in the event of link failure, providing seamless failover and minimizing service disruption.

Its dedicated custom security processing unit (SPU) allows the FortiGate to accurately identify thousands of different applications, enabling intelligent traffic steering, enhanced quality of service, and rapid application-aware security processing.

For ease of management, FortiManager was deployed to provide single-pane-of-glass visibility and control over the entire infrastructure. With this, ENOC benefits from less complexity and lower total cost of ownership (TCO). FortiAnalyzer was added for its action-oriented analytics, and its drill-down reporting around web traffic, applications, users, and threats to ease the burden of regulatory compliance.

**Business Impact**

- 55% cost savings resulting from lower multiprotocol label switching (MPLS) usage and simpler administration
- Increased revenue and enhanced customer experience through 18x reduction in point of sale (POS) transaction time
- Increased operational efficiency through 4x increase in network speed and performance and the elimination of network downtime

**Solutions**

- Fortinet Secure SD-WAN
- FortiManager
- FortiAnalyzer

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“By reducing dependency on MPLS, we have substantially reduced the associated service fees,” adds Al Rais. “When you combine this with the reduced management overhead achieved by convergence, it equates to an approximate 55% cost savings over the previous solution.”

Path to Increased Revenue and Productivity

With increased network reliability, lower latency, and speed and performance having increased by a factor of four, ENOC has already been able to transform the customer service experience at its vast network of filling stations.

To increase transaction security, limit the potential for fraud, and reduce the time required to process each new customer payment, the team developed a new POS scenario, making use of the reduced network latency, in which the sale value would no longer need to be entered manually.

“Before, customers sometimes had to wait about 60 seconds for ENOC Pay transactions to be processed,” explains Al Rais. “With the new scenario, it is now less than 10 seconds—something that would have been impossible with the old network.”

Overall, Fortinet Secure SD-WAN has enabled ENOC to better protect its reputation and assets through strengthened security controls, laying the foundation for continued revenue growth through increased operational efficiency and enhanced customer service levels.

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