

# Major Refining Company Connecting Monitoring and Security Tools



## Major Oil and Gas Company BP Chooses Network Critical to Monitor and Protect both Information Technology and Operation Technology

### Summary

The Oil and Gas Industry is a critical asset to world lighting, heating and movement. The industry is currently undergoing a major shift from closed Industrial Control Systems (ICS) meaning non-internet connected, to digitization of both Operational Technology (OT) and Information Technology (IT) systems. While oil and gas companies are reaping efficiency benefits from IoT connectivity such as remote tank, flow and compressor monitoring, they also are increasing their risk of cyber attack to those and other connected operational and monitoring systems.

### The Challenge

Oil and gas operations can be categorized into three separate operations. Upstream, (exploration and drilling), midstream (transport and terminal management) and downstream (refining and retail). These operations are geographically remote from one another and often difficult to physically access. Therefore, being able to remotely monitor and control these widespread and diverse operations from a single location is a dramatic economic benefit. Digitizing control, however, also increases the threat landscape by having critical control operations connected to cloud services. The challenge is to reduce the potential vulnerabilities while taking advantage of digitization benefits.

Continuous monitoring of equipment inventory, firmware and network traffic is required to close the window of opportunity for malicious code being either purposefully or accidentally injected into critical control systems. Traffic monitoring requires specialized equipment to

**“Continuous monitoring is critical to digitization and automation of our many monitoring systems. Being able to monitor remote sites from a single location keeps our systems up to date without having a large staff running around in trucks.”**

Senior Project Manager, Refining Operations

access network links, capture, analyze and report on traffic flow. This equipment must be passively connected to links so that it does not impact production traffic. Another challenge is space and power at remote locations such as drilling platforms. The solution must be compact, safely connected, require minimal power and accurately capture 100% of the traffic on the link. SPAN ports, sometimes used to connect monitoring tools, do not offer



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**“In addition to monitoring control systems, we have security tools that understand our traffic patterns and look for anomalies that might signal malware or viruses attempting to embed in our systems. Unauthorized manipulation of our monitoring systems can have serious safety and production consequences. Network Critical TAP’s help us manage security without impacting network traffic.”**

Director, IT Services

enough physical connections and can drop packets during times of high traffic volume. This can impact the integrity of the monitoring analysis and, therefore, not a viable solution for this application.

#### Network Critical Solution

BP had a requirement to connect multiple tools for monitoring and security of IT and OT systems. These tools monitor switches, firmware levels, inventory, security protocols and other critical elements at refineries that span over 10-12 buildings. In order to connect these sensors, the company chose Network Critical Passive Fiber Optical TAPs. These TAPs create a passive connection to links passing full duplex traffic, including errors, ensuring a complete copy of the traffic is sent to monitoring and security tools without impacting live traffic. This is accomplished by splitting the optical budget allowing a pre-determined amount of bandwidth through to the live network and sending the balance to the tools. All live traffic passes through the TAP at full speed while a complete mirror copy of the traffic is sent to monitoring tools.

These optical TAPs use no power so there is no risk of the network being impacted as a result of power glitches which can be a problem in remote locations. Further, the optical

fiber TAPs allow the highest port density in the industry saving valuable real estate in space restricted locations. Because there are no active electronics or management systems there is no initial configuration or ongoing maintenance requirements. The units ship preconfigured to the desired split ratio and are deployed by simply plugging in the network and tools connectors. There is also no need to set or change speeds as the units are preconfigured for multi-mode fiber at 1Gbps to 10Gbps or single mode fiber at 1/10/40/100Gbps.

#### Solution Benefits

Centralized monitoring of critical information and operational systems provides a high level of service assurance and robust protection against attacks that can cripple production. Remote, centralized monitoring allows a small crew of experts to monitor reports and manage alarms with minimal travel to remote sites reducing OPEX budget. Response time to alarms are immediate, eliminating hours of travel to remote sites. Using fail safe passive optical fiber TAPs from Network Critical allows BP to realize the economic benefits of digitization without adding the risk of crippling security breaches.

#### About Network Critical

Network Critical is an industry leader in network access technology. Our quality 1/10/25/40/100G modular TAP and Packet Broker solutions ensure that our customers have continuous network visibility. Network Critical products eliminate any concerns of downtime and our unique scale-out capabilities enable simple, cost effective expansion, as network and port density requirements grow.

The health of your network is always secure with Network Critical products. Our fully flexible range of TAPs and Packet Brokers are used with IDS, IPS, network traffic monitoring tools, sniffers and many other mission critical appliances, to provide 100% network visibility with zero packet loss.

With over 20 years experience, a number of industry “firsts” and a reputation for excellent customer service, Network Critical’s solutions are widely used in global networks across a wide range of sectors including Finance, Telco, Government, Energy and Healthcare. For more information, visit <http://www.networkcritical.com>.

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