



### Security for Private LTE/5G, Industrial IoT, Fixed Wireless Access, and non-traditional networks

#### Joins Components

- Cubro’s EX400 Advanced Bypass Switches
- Fortinet FortiGate and FortiWeb Cellular Network Security Appliances

#### Joint Solution Benefits

- Reduce CapEx and OpEx through downtime mitigation and enhanced network serviceability, and drastically mitigate maintenance and recovery windows
- Ensure a highly available network that is always protected
- Simply add security capacity as needed via advanced load balancing
- Use the most cost-effective interfaces on every device
- Visualize and secure end-to-end from Network Infrastructure to applications

#### Executive Summary

Security for new cellular networks (Private LTE/5G, Industrial IoT, and non-traditional networks) based on the new spectrum must be “Always-On” and secure. FortiGate and FortiWeb appliances provide advanced inline protection for the Network Infrastructure and applications. Cubro’s EX400 Advanced Bypass Switches provide redundancy and high-availability, and enhanced serviceability of the Fortinet appliances.

#### Introduction

Technology evolution in mobile networks in 4G, and the introduction of 5G, is presenting mobile network operators (MNOs) with the opportunity for a profound change in their addressable market segments and the scope of services they provide. New technology enables innovation in all industries, from manufacturing and energy to transport, logistics, and healthcare. Cellular private networks provide capabilities needed to serve an organization’s mission-critical or business-critical use cases, ranging from connectivity to QoS, security, availability, latency, and more—all specifically tailored for their needs. Security is of the utmost importance, especially in Industrial IoT and private networks, along with most cellular infrastructure: public or private.

#### Joint Solution

Cubro and Fortinet have partnered to deliver an industry-leading security solution to address these challenges. The integration of the Cubro’s EX400 Advanced Bypass Switch product with Fortinet FortiGate Next-Generation Firewall and FortiWeb security appliances, enabled through the Fabric-Ready Program in the Fortinet Open Fabric Ecosystem, delivers high availability, load balancing, and enhanced serviceability for the Fortinet inline security infrastructure in new and traditional cellular networks.

## Joint Solution Integration

Using a configurable heartbeat function, the bypass can detect a failed NGFW or other device, and then assure that traffic flows to a backup unit. When both systems are functioning, the Cubro bypass switch load balances between them. This ensures an NGFW can be easily removed from service for upgrades, or repair without time consuming re-cabling or reconfiguration. The Cubro EX400 Advanced Bypass allows customers to add security capacity as needed, as well as decouple the network interface types and speeds from that of the security devices required.

## Joint Solution Components

### Cubro EX400 Advanced Bypass Switch

Bypass Switches can be implemented as internal (for example as part of packet broker) or external (like the Cubro EX400 Advanced Bypass Switch). An external bypass can have as much as 5X greater Mean Time Between Failure (MTBF) than a complex network device with extensive software features. Additionally, a tool with an internal bypass can fail if becomes overloaded due to a traffic burst or responding to an actual attack. The Cubro EX400 Advanced Bypass Switch reduces network CapEx and OpEx through downtime mitigation and enhanced network serviceability, and drastically mitigates maintenance and recovery windows.

### FortiGate Next-Generation Firewall

Fortinet NGFWs reduce cost and complexity by eliminating point products and consolidating industry-leading security capabilities. These include secure sockets layer (SSL) inspection (including TLS1.3), web filtering, and intrusion prevention (IPS) to provide full visibility and protection for any edge.

### FortiWeb

FortiWeb, Fortinet's Web Application Firewall, protects your business-critical web applications from attacks that target known and unknown vulnerabilities. The attack surface of your web applications evolves rapidly, changing every time you deploy new features, update existing ones, or expose new web APIs. You need a solution that can keep up. FortiWeb is that solution.

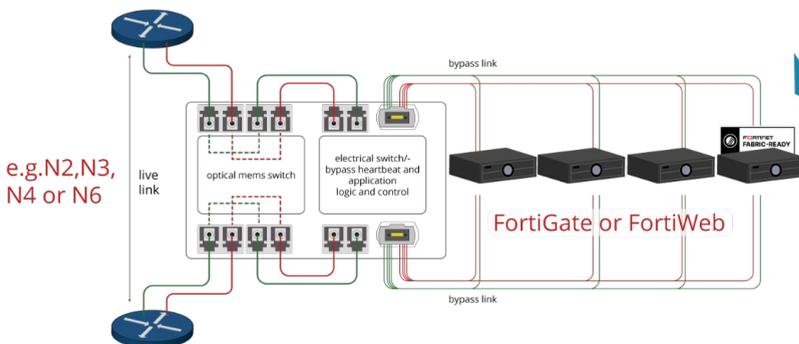
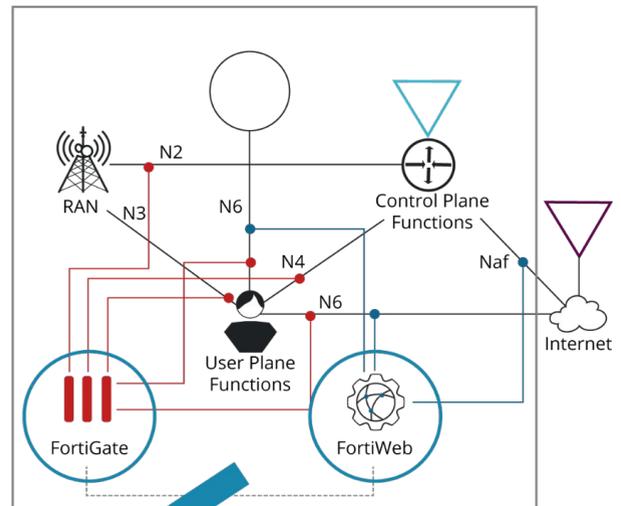
## Use Cases

### Cellular Network Operator Secures Gi-LAN with FortiGate NGFW and Cubro

A cellular network operator protects its LTE Core network from Malware, Viruses, and other Internet-based threats with FortiGate and FortiWeb appliances. Cubro Advanced Bypass switch provides load-balancing and high availability for security devices.

*“Our business relies on critical network links. We deployed Cubro Bypass Solution to support inline network security and monitoring devices. As a result, we have been able to get comprehensive support of network and security tools without the risk of network interruptions.”*

#### Network Monitoring Architect, Mobile Operator, South America



- EX400 Capabilities**
- Fail-Over to Hot Standby
  - Load Balance between multiple FortiGate / FortiWeb devices
  - Retain full access to all WAN circuits
  - Upgrade or perform device maintenance with zero downtime

With programmable heartbeat  
 ½ 19 inch size 2 links per 19 inch possible



For more information please visit [www.cubro.com](http://www.cubro.com) and [www.fortinet.com](http://www.fortinet.com).

