Fortinet and NEC SDN Security Solution
Automated Cyber Defense enabled by software defined networking

Cyber-attacks are growing in sophistication and volume, and causing massive data breaches at organizations worldwide. Survey data suggest that 80% of leaked information is obtained through external cyber-attacks. Viruses or malware can penetrate an enterprise network environment and steal information over a period of months, or even years, by cleverly concealing themselves. By the time the crime is uncovered, the important information has often already been leaked. Hacking methods are becoming increasingly devious and complex, making it extremely difficult for individual enterprises to mount an effective response.

NEC and Fortinet have established a technology partnership to address the above challenges to help organizations effectively secure their deployments. The Fortinet-NEC joint solution provides Software Defined Networking (SDN)-enabled automated cyber defense, which automates and enhances an organization’s ability to protect against cyber-attacks.

Solution Description
NEC’s ProgrammableFlow SDN solutions simplify network operation and increase network visibility, improving service levels by fine-grained control and visibility of network traffic. ProgrammableFlow SDN allows the network to be virtually micro-segmented based on administrator defined criteria. Because of this unique network virtualization capability, network segments are independent from the physical layout of the network and can be modified as the network evolves. By combining the NEC ProgrammableFlow Controller with Fortinet’s FortiGate enterprise firewall platform, it is possible to enhance the protection inside the perimeter by identifying infected devices in one of two ways:

- An in-line security appliance identifies infected traffic from a device on the network.
- TAP or SPAN traffic is sent to the FortiGate firewall for inspection. When the FortiGate firewall detects suspicious activity it instructs the ProgrammableFlow (using a dedicated software adapter) to isolate, redirect (to honeypot or other device), or drop traffic from the IP address of the workstation where it originated, thus preventing the damage from spreading. The network administrator is notified by e-mail of the action taken. This is achieved in seconds or tens of seconds (because of the automation) as opposed to minutes or days if done manually, without affecting other traffic in the network.

Solution Components
- Fortinet FortiGate firewall (physical or virtual appliance).
- NEC ProgrammableFlow used to control traffic in the enterprise Software Defined Network.
- NEC SDN Security Adaptor used to scan the logs generated by the FortiGate firewall for possible threats, and instructs the ProgrammableFlow controller to block traffic from workstations that show suspicious activity and notifies the system administrator.

Solution Benefits
- Reduces the risk of information leaks, system shut-down, Denial of Service attacks, and ransomware
- Enables faster response to cyberattacks by automatically blocking infected workstations
- Enables enterprise network microsegmentation and uses virtual firewalls between segments, thus confining potential threats
- Allows quick identification of infected workstations
- Enhanced network management by using NEC ProgrammableFlow SDN controller
- Comprehensive end-to-end security visibility provided via the Fortinet Security Fabric
- Leverage the industry’s best validated security protection offered by Fortinet’s FortiGate network security platform to protect against sophisticated cyber-threats
The functionality of the joint solution is summarized in the diagram below.

In summary, NEC SDN automatically blocks communications from an infected terminal when triggered by a security incident detection on the Fortinet FortiGate firewall.

**About NEC**

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