5G-Native Security
At a Glance

5G Security Challenges

5G is a vital component of the digital backbone of tomorrow's economy. From consumers to enterprises, governments, and critical industries, society will depend on 5G. For this reason, 5G must:

- Live up to society's elevated security expectations.
- Withstand sophisticated and evasive attacks as the speed and scale of threats on 5G networks rise.
- Provide instant security as speed and automation are essential when new 5G services are launched across clouds.
- Seamlessly integrate with enterprise architectures.

A new approach to 5G security is needed.

Trailblazing Protection for Your Entire 5G Infrastructure

Palo Alto Networks 5G-Native Security allows service providers to safeguard their networks, users, and clouds as well as back their customers with enterprise-grade security they need for tomorrow's 5G economy.

5G-Native Security allows organizations to extend Zero Trust to their 5G environments to help protect their business-critical 5G users, devices, and applications.

Features

5G-Native Security offers a comprehensive approach to protecting all facets of 5G networks. Service providers can deploy a Zero Trust architecture for their 5G network infrastructure and the business-critical enterprise, government, and consumer traffic it carries. Enterprises and organizations can protect their 5G users, applications, and infrastructure with the same Zero Trust approach they use in their other network segments.

5G Network Infrastructure Security	
Protection of key interfaces for core network, radio access, roaming, and multi-access edge computing (MEC) locations	ML-Powered NGFW for 5G
Secure 5G and telco cloud workloads across CNFs, VNFs, VMs, containers, and serverless; compliance and vulnerability management; web application and API security	Prisma Cloud

5G Security Operations Center	
5G security operations center (SOC)—security incident response and attack surface management orchestrated across your 5G, cloud, and hybrid environments	Cortex

Enterprise-Grade Security for User Traffic	
Granular visibility and policy control of 5G user traffic	ML-Powered NGFW for 5G
Best-in-class Layer 7 security for 5G user traffic	ML-Powered NGFW for 5G, PAN-OS, Cloud-Delivered Security Services
Enterprise value added services through network slice, MEC, and private network security capabilities	ML-Powered NGFW for 5G

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How It Works

5G-Native Security combines best-in-class capabilities across network security, cloud security, security orchestration and response, and attack surface management for the industry's most comprehensive 5G security solution.

ML-Powered NGFW for 5G

Secure all network layers and locations with the industry's most advanced cloud native network security.

Prisma Cloud

Protect your telco cloud with the industry's only comprehensive cloud native security platform.

Cortex XSOAR

Transform your 5G security operations with the industry's leading SOAR platform.

Cortex Xpanse

Gain always-on visibility to your external interfaces.

Figure 1: Trailblazing protection for the entire 5G infrastructure—from core to cloud to SOC and beyond
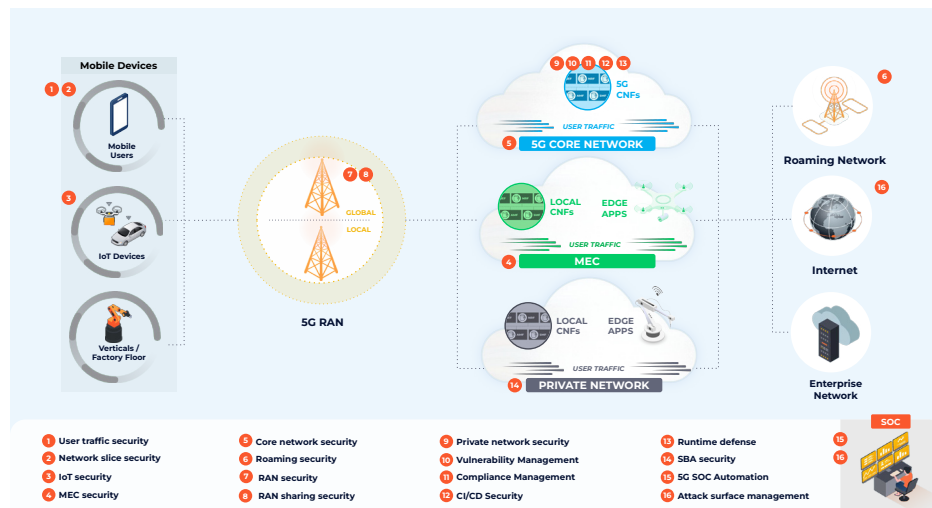

Figure 2: 5G-Native Security protects all 5G security use cases with full visibility and control, leveraging AI, ML, and automation

Key 5G Security Use Cases

1. User traffic security
2. Network slice security
3. Internet of Things (IoT) security
4. Multi-Access Edge Computing (MEC) security
5. Core network security
6. Roaming security
7. Radio Access Network (RAN) security
8. RAN sharing security
9. Private network security
10. Vulnerability management
11. Compliance management
12. CI/CD security
13. Runtime defense for CNFs, VNFs, and serverless functions
14. Service-Based Architecture (SBA) security
15. 5G SOC automation
16. Attack surface management

Support for All 5G Environments and Telco Clouds

5G-Native Security supports all key mobile infrastructure environments across on-premises, virtual, and containerized—including public and private telco clouds.

ML-Powered NGFW for 5G is available in our PA-Series hardware-based, VM-Series virtual, and CN-Series container-based form factors. All firewalls can deliver advanced Layer 7 security through PAN-OS and Cloud-Delivered Security Services (CDSS).
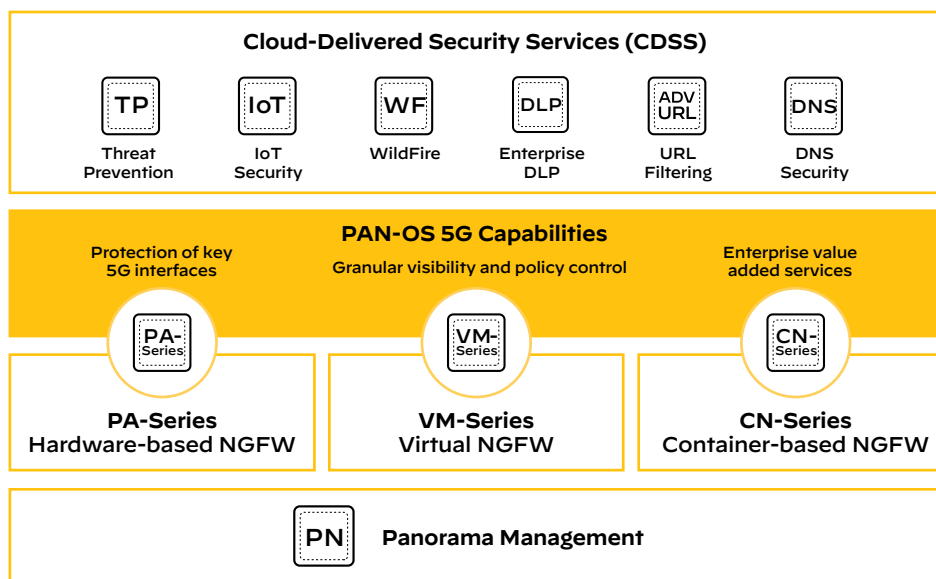
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Figure 3: All ML-Powered NGFWS can deliver advanced Layer 7 security through PAN-OS and CDSS

Product	Supported Environments Include
VM-Series	• VMware NSX®, VMware ESXi™, VMware vCloud® Air™, Linux KVM, OpenStack®, Cisco ACI®, Arista
CN-Series	• On-premises Kubernetes: Native Kubernetes, Red Hat OpenShift®, VMware Tanzu® Kubernetes Grid • Public cloud Kubernetes: AWS® EKS, Microsoft Azure® AKS, GKE
Prisma Cloud	• Microsoft Azure, AWS, Google Cloud, Oracle, Alibaba Cloud, Red Hat OpenShift, Kubernetes, VMware Tanzu

Automation, AI, and ML

Palo Alto Networks 5G security solution is highly automated, delivering advanced ML-powered security and operational simplicity—freeing you to stay on top of new threats and attacks against your infrastructure:

- ML-Powered NGFW for 5G is highly automation friendly with extensive support for API-driven deployment options.
- PAN-OS® and CDSS use advanced AI and ML technologies for real-time threat detection and prevention.
- Prisma® Cloud leverages AI and ML for anomaly detection across network, DNS, filesystem, processes, and to detect potential malware files.
- Cortex® enables SOC teams to orchestrate and automate the response to threats in 5G environments.

Key Benefits for Service Providers

- **Accelerate enterprise adoption of 5G** by backing your network with enterprise-grade security your customers need.
- **Protect all layers and locations of your mobile infrastructure** with a comprehensive, simple-to-manage network and cloud security across on-premises, and public and private telco clouds.
- **Identify new opportunities** to serve your enterprise customers with value added security services.
- **Launch new services faster** with automation-friendly security, featuring open APIs, that keeps up with your dynamic 5G service orchestration.
- **Reduce incident response time by 50%** with automation and orchestration tools for your 5G SOC.
- **Deploy Zero Trust architecture** for your entire 5G infrastructure.

Key Benefits for Enterprises

- **Confidently take advantage of new 5G capabilities**, including MEC, private networks, and network slices while protecting your business-critical data.
- **See and stop advanced attacks** against mobile users and devices in real time.
- **Deploy Zero Trust architecture** for your 5G environment with the ability to enforce granular user- and device-based security policies.