Affirmed Unity Cloud
Bringing 5G and Webscale Technology To Mobile Networks

Affirmed UnityCloud

OVERVIEW

Affirmed UnityCloud is a webscale, cloud-native, 5G solution that empowers operators to dramatically reduce the costs of operating the network up to 90% by simplifying and automating network functions.

BENEFITS

1. Generate new revenue streams with an innovation platform that reduces the costs and complexity of deploying new services
2. Simplify the network and reduce costs by converging 'Any G' and wireline networks onto a single platform
3. Run services from anywhere in the network by building once deploying anywhere including core to edge and public, private or hybrid clouds

The enterprise market for 5G services isn't simply big, it's G-normous. Smart factories, drone deliveries, connected cities, virtual reality gaming, autonomous vehicles and remote real-time medicine are just some of the services that expect to leverage 5G's high speeds, low latencies and flexible agility. For mobile network operators (MNOs), 5G is the revenue opportunity of a lifetime, driven by a growing enterprise market that analysts expect will soon overshadow consumer services in terms of revenue share. The question is no longer whether the 5G opportunity is there, but whether your network will be ready to support new revenue opportunities.

While the majority of MNOs have embraced virtualization on the road to 4G, a cloud-native architecture will be required to support new 5G Core (5GC) services. This new architecture will need to provide several key characteristics:

- Fine-grained network slicing capabilities that can support customized 5G services based on unique requirements for latency, security, scalability, etc.
- A microservices-based environment that allows MNOs to quickly innovate, create and deploy new 5G services in weeks or days without impacting their existing network services;
- A distributed architecture that can support high-bandwidth, low-latency applications anywhere they're needed: in the core, at the edge, or in a public/private/hybrid cloud environment;
- Agile and DevOps models that enable MNOs to compete with the big cloud providers and over-the-top (OTT) competitors by adopting the same flexible, fail-fast approach to innovation.

How do MNOs get to the cloud-native, webscale network they need to effectively deliver 5G services? Affirmed's UnityCloud solution has been designed from the ground up to provide these capabilities and help MNO's get ready to deliver 5G services.

Affirmed UnityCloud: Bringing Together 5G & Webscale Technology to Drive Digital Transformation

Affirmed UnityCloud is the industry's first cloud-native solution built on an open, web-scale architecture, which allows MNOs to build the most innovative 5GC network, converge multiple networks into

one unified network without being locked into a proprietary platform, and monetize revenue generating services. Affirmed's UnityCloud includes a unique Platform as a Service (PaaS) that provides a robust, open-source architecture featuring best-of-breed cloud ecosystem of applications to address everything from container lifecycle management (Kubernetes, Helm) and database services (MongoDB) to network monitoring (Envoy, Jaeger, Prometheus). It also consists of a

cloud-native operations and policy manager (OPM) that automates, creates policies and launches dashboards providing operators complete control of their network. UnityCloud supports a seamless transition to 5G by integrating legacy network services—including wireline services—into an advanced, open 5GC architecture that leverages leading cloud-based technologies alongside Affirmed's industry-leading NFVi platform and microservices-based, cloud-native functions (CNFs).
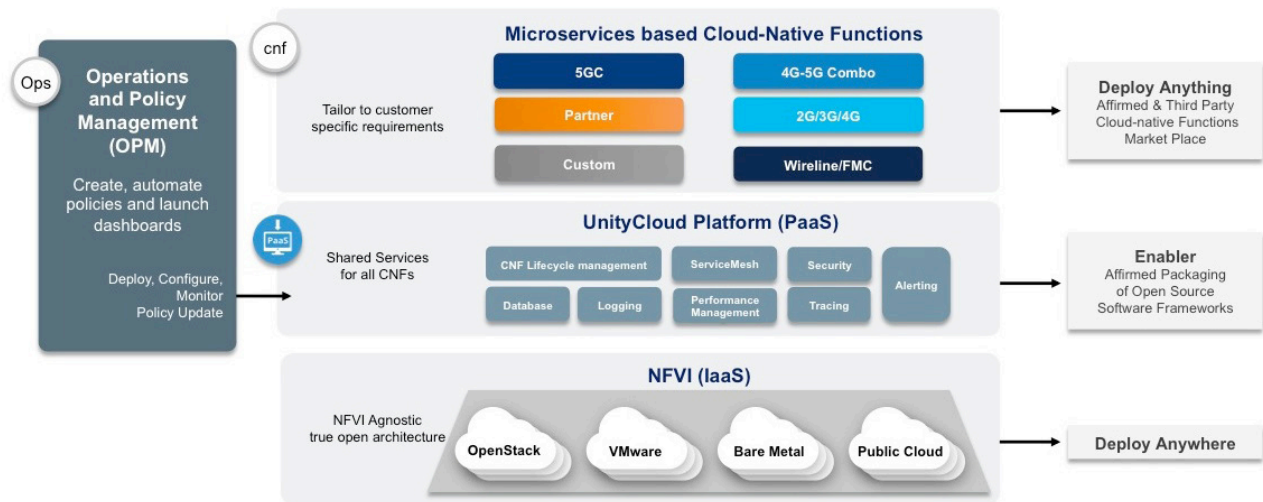

Figure 1. Bringing Together 5G and Webscale Technology to Drive the Telco Digital Transformation

Affirmed UnityCloud provides MNOs with a proven, flexible and powerful platform to create, deploy and manage 5G services for enterprises and consumers. With UnityCloud, MNOs can finally remove the traditional barriers to telco service innovation:

✓ **Enter new vertical markets.** UnityCloud's microservices-based architecture and network slicing capabilities allow MNOs to create and launch new services for vertical and specialized markets in days, not weeks or months.

✓ **Build once, deploy anywhere.** UnityCloud allows MNOs to easily deploy services in the core, at the edge or in a public/private/hybrid cloud environment for optimal efficiency and performance.

✓ **Dramatically reduce network complexity.** Zero-touch automation and orchestration, built-in monitoring and a converged network architecture that consolidates legacy and 5G services into a common core make for a much simpler, smarter network that requires significantly less effort to manage.

✓ **Own your own future.** UnityCloud's NFVi-agnostic architecture delivers industry's best performance at the lowest TCO. It is designed to provide an open, best-of-breed, cloud-native platform that eliminates dependence on proprietary technologies for the future.

The Four Pillars of Excellence

UnityCloud is based on what we believe are the four foundational pillars for excellence: innovation platform, automatic networks, self-assured networks and non-stop reliability.

Innovation Platform

UnityCloud is your innovation platform, specially designed to minimize the risks and cost of new service creation to help you compete in the fail-fast world of cloud computing.

- **Finely grained network slicing** ccapabilities allow you to roll up new services in hours and new slices in minutes;
- Test new markets at low risk through continuous monitoring of services using **DevOps-based environment** supporting continuous integration/ delivery (CI/CD) model favored by Agile cloud app developers;
- Stateless microservices can be autonomously developed and released without impacting existing microservices or network functions;
- **Unique combo node network functions** such as 4G-5G functionality to allow for a seamless transition to 5G when the time is right.
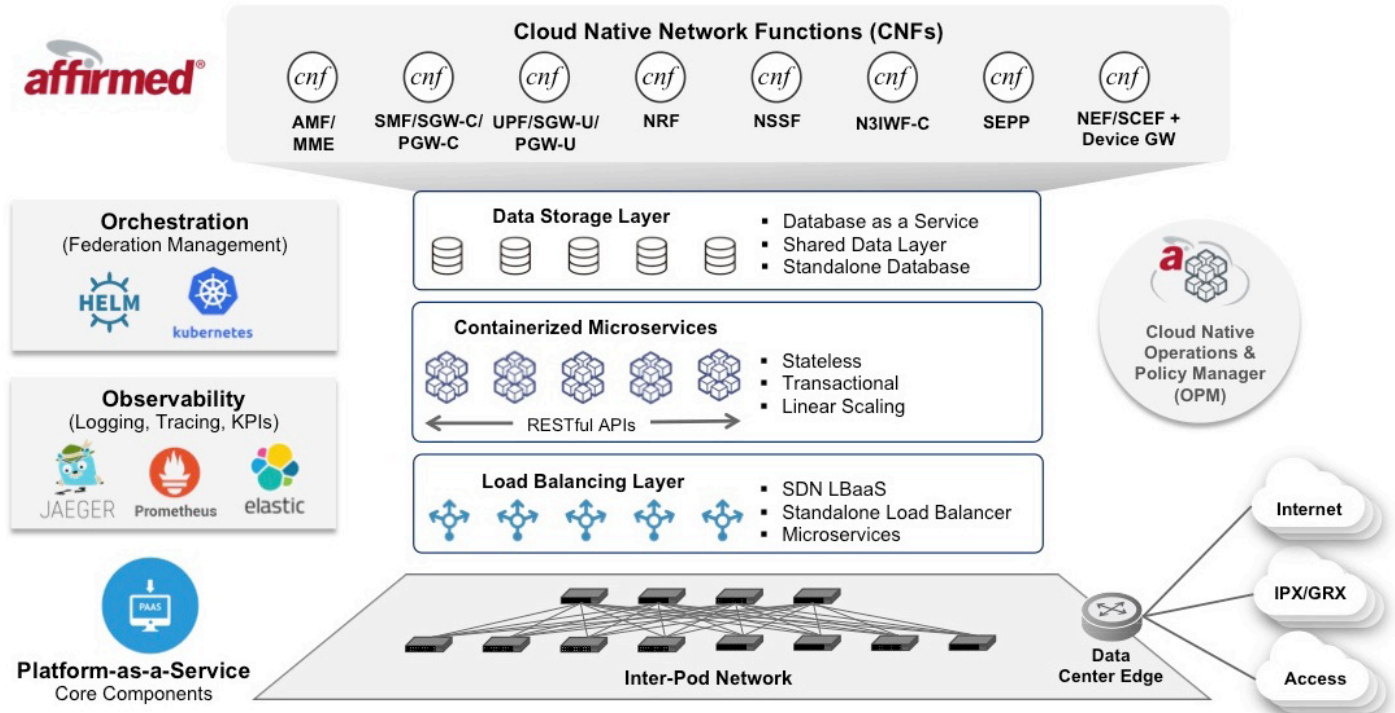

Figure 2. Affirmed Cloud-Native Architecture

Automated Networks

UnityCloud automates the network to reduce complexity and eliminate manual inefficiencies—two of the greatest barriers to innovation.

- **Zero-touch, end-to-end service automation** and orchestration allows MNOs to easily create new CNF instances and auto-scale their network dynamically;

- Support for Kubernetes/Helm-based **dynamically orchestrated microservices** that can be instantly created, updated and removed based on real-time traffic demands and predefined policies;
- A **fully integrated and automated PaaS layer** featuring the leading open-source cloud technologies: Kubernetes, Helm, MongoDB, Jaeger, Elastic, Envoy and many others, enabling MNOs to take back control of their network and react quickly to market demands.

Self-Assured Networks

UnityCloud is a highly observable network environment that enables MNOs to deliver high-bandwidth, low-latency and low-cost services with confidence.

- Built-in assurance and performance management (Elastic)
- Built-in tracing, logging and network assurance (Jaeger)
- Built-in monitoring and alerting (Prometheus)

Non-Stop Reliability (non-stop features)

UnityCloud is a carrier-class platform that supports mission-critical enterprise requirements for ultra-high reliability, quality and security.

- Delivers six 9's of availability, even during daily upgrades and new feature/functionality adds;
- Supports hitless in-service canary upgrades to safely test new upgrades and features before full deployment;
- No maintenance windows are required, as maintenance functions can be safely performed while services are still running.

UnityCloud: The New Standard for 5G Excellence

Affirmed UnityCloud supports the new global 5G radio standard that provides major performance, cost and efficiency improvements over previous wireless technologies. Only UnityCloud allows MNOs to deploy a fully functional, cloud-native 5GC architecture at their own pace by seamlessly supporting legacy and 5G services within the same mobile core environment. There's no need to rip and replace to reach the future with UnityCloud; its cloud-native, microservices-based architecture allows MNOs to strategically respond to change and opportunity with speed, agility and assurance.

With 5G, we stand at the edge of a new world of opportunity. Don't let your legacy network or locked in vendor relationships hold you back. Affirmed UnityCloud provides a clear path to help you win the race to revenues. Let Affirmed help you explore the possibilities, untether your imagination and move forward into the 5G future with confidence.

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