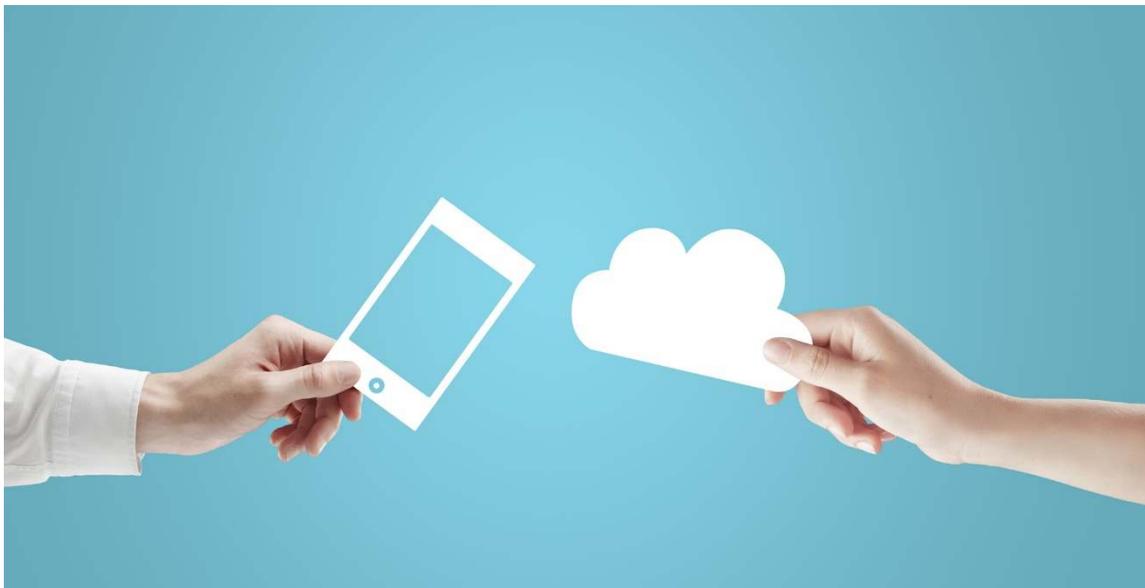


Going Mobile with Affirmed on AWS

Need to Grow Your Mobile Services Revenue Fast? The Answer is Affirmed on Amazon Web Services.



"Leveraging Affirmed Networks' industry-leading, web-scale mobile core solution on AWS is proving to be a game-changer."

Bertrand Salomon, Deputy CEO of Transatel



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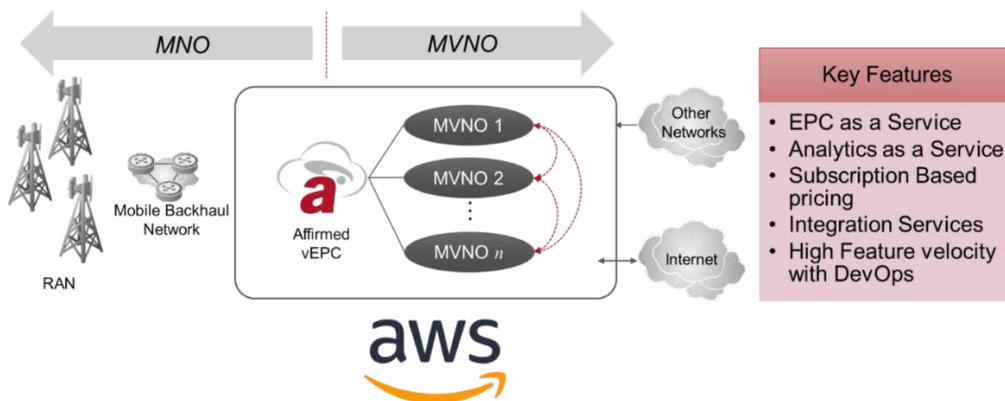
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Go Mobile, Go Global with Affirmed on AWS

What do you get when you combine the world's leading virtualized mobile core solution with the world's largest cloud platform? A world of opportunity to make more money, more quickly from mobile services.

The battle for new mobile services will be fought in the cloud. Mobile traffic is expected to increase ten-fold in the coming years, while revenue for traditional services (e.g., voice, data, messaging) remains flat. The new revenue opportunities will be found in the next wave of mobile services, which will be both highly personalized on the consumer side and, in the case of IoT applications, highly mechanized. In order to accelerate innovation, scale efficiently to meet rising demands and deliver new services at a competitive price-point, mobile service providers must transition from a costly legacy network architecture to a virtualized, cloud-based environment.

To date, all of this has been easier said than done. Most network equipment vendors have only recently adopted virtualized platforms and are still catching up to the cloud. Those mobile operators that have adopted virtualized cloud platforms have made a significant investment in re-envisioning their networks for a cloud-based future. At the vanguard of the cloud revolution is Affirmed Networks and its virtualized Evolved Packet Core (vEPC) solution, Mobile Content Cloud (MCC). With the Affirmed vEPC, mobile service providers can deploy a fully virtualized, cloud-native mobile core—the first in the industry—to dramatically reduce costs and accelerate service creation and revenue through advanced capabilities such as automated service provisioning, real-time analytics and network slicing.



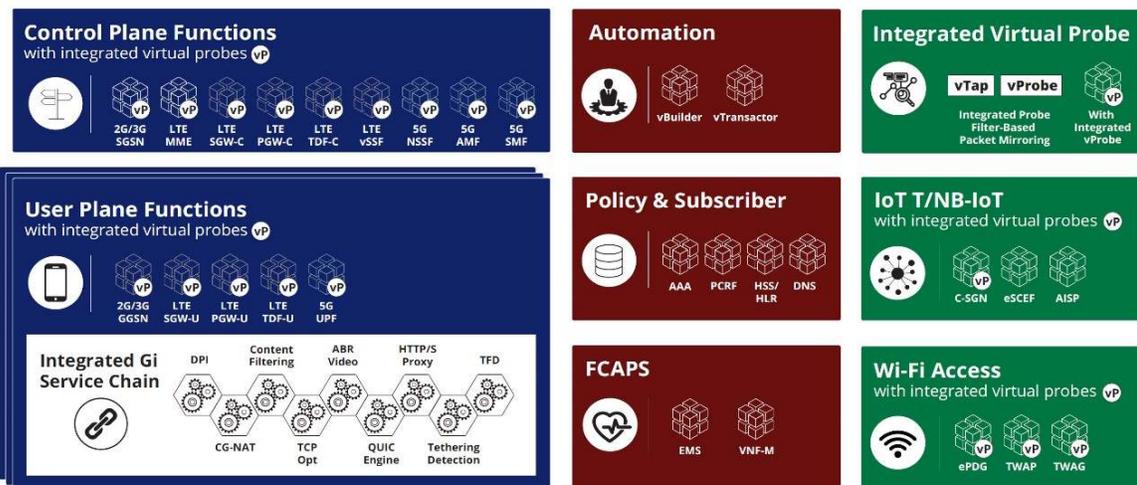
Cloud Hosted Mobile Core Solution Allows Network Operators to Quickly and Economically Deploy 4G and 5G Services

Amazon Web Services (AWS) is a cloud platform that needs no introduction. It has become the gold standard for hosted cloud computing, with a global presence and legendary performance. For years, enterprises have hosted their applications and infrastructure in AWS cloud. More recently, telecommunications operators have begun to do the same in the form of select VNFs. To date, however, it has been impossible to launch an entire mobile core in the cloud. Until now.

With the announcement that Affirmed’s vEPC solution can now run on AWS, mobile service providers—from traditional mobile network operators (MNOs) to mobile virtual network operators (MVNOs) and mobile virtual network enablers (MVNEs)—can now deploy a complete, carrier-class virtual mobile core in a hosted cloud environment. This is a game-changer in the industry. For the first time in history, mobile operators can roll out a complete mobile platform in minutes: pre-integrated, pre-validated and prepared for production traffic from day one, with nearly infinite scale. Let the race for mobile services revenue begin.

The Evolved Packet Core, Re-Imagined

The Evolved Packet Core (EPC) is the engine that drives today’s mobile services, yet many mobile operators find their networks are in overdrive as subscriber demands for more video and data increase. Affirmed’s virtualized EPC (vEPC) solution, Mobile Content Cloud (MCC), provides mobile operators with a smarter way to scale their networks and deploy new services by consolidating the core functionality of the mobile network—session and mobility management, value-added services, policy control, Wi-Fi interoperability—into a powerful, virtualized platform that can be quickly deployed on commercial-off-the-shelf (COTS) hardware and managed with commercially available virtualization hypervisors.



Affirmed Networks 5G Mobile Core

In a standard EPC environment, adding network capacity means adding more appliances: voice, signaling and data gateways; policy control functions; Wi-Fi and machine-to-machine (M2M) gateways; and a full VAS environment. With Affirmed's vEPC platform, those appliances are replaced by virtualized network functions (VNFs) that can be spun up in minutes, loaded on common-off-the-shelf (COTS) servers and managed as virtual machines through a standard hypervisor. In addition, Affirmed's vEPC solution includes many advanced features not found in a standard EPC platform, such as service automation, independent scaling of the user and control planes, drag-and-drop chaining of GiLAN services, network slicing capabilities and virtualized network probes that deliver real-time analytics. The difference between a standard EPC platform and Affirmed's vEPC solution is dramatic: 10X more performance per server, 70% lower total cost of ownership and new services that can be launched in days instead of months.

Beyond improving the delivery of legacy 2G/3G/4G services, Affirmed's vEPC supports 5G services. Designed from day one for cloud-native operation, the vEPC is uniquely architected to deliver maximum performance in the cloud, 150Gbps on a single server, support for 5G New Radio (NR) standard, and support for control plane and user plane separation (CUPS) enabling a distributed architecture to support high bandwidth low latency applications and Mobile Edge Computing (MEC). The Affirmed vEPC is quite simply the smartest, simplest path to 4G/5G services in the cloud.



Here's What You Get with the Affirmed vEPC on AWS

Affirmed's vEPC solution provides a complete, consolidated mobile services core that can scale from a single server to thousands of servers. vEPC features fully tested and proven VNFs that deliver a rich ecosystem of mobile services including:

- ✓ Serving GPRS Support Node (SGSN) and Mobile Entity Management (MME) functions that support 2G, 3G, 4G/LTE, 5G and VoLTE services including voice, data and messaging
- ✓ Gateway GPRS Support Node (GGSN), Signaling Gateway (GSW) and Packet Gateway (PGW) functions with broad protocol support for peering
- ✓ Integrated Deep Packet Inspection (DPI)
Service Chaining of GiLAN services featuring an intuitive drag-and-drop interface that allows mobile operators to quickly create new mobile services from dozens of distinct service components (e.g., policy, security, video optimization)
- ✓ Evolved Packet Data gateway (ePDG) and Trusted WLAN Access Point/Gateway (TWAP/TWWAG) functions for secure access to trusted and untrusted Wi-Fi networks including support for Voice over Wi-Fi
- ✓ A distributed architecture (CUPS) to support high bandwidth low latency applications and Mobile Edge Computing (MEC).
- ✓ Support for 5G New Radio (NR) Standard
- ✓ Affirmed's Service Automation Platform (ASAP) that allows mobile operators to create and deploy customized mobile services in minutes
- ✓ vProbe, Affirmed's virtualized network probe solution that can be added to any VNF for real-time network intelligence and analytics
- ✓ Virtual Slice Selection Function (VSSF) for real-time network slicing to support new services including IoT and M2M applications.

A Scalable, Flexible Mobile Network in the Cloud

With Affirmed's vEPC running on AWS, mobile operators can extend their mobile presence to almost anywhere in the globe, without the cost and complexity of deploying a network/data center. Affirmed's cloud-native, NFV-compliant architecture scales extremely well on AWS and delivers exceptional performance—as much as 150 Gbps of throughput on a single Intel-based server. MCC also provides exceptional flexibility—allowing mobile operators to quickly spin up new VNFs using decomposed VNF elements—with the ability to scale the user and control planes independently for dynamic load balancing.

Mobile operators can easily and securely connect their AWS-hosted mobile core to other networks using standard interfaces, including GRPS Roaming Exchange (GRX), IPX (via Gi/SGi) and IPsec tunnels. Through Amazon's global cloud platform, vEPC users also enjoy geo-redundancy and geo-resiliency for reliable, high-performance.

Grow As You Go, Pay As You Grow

Affirmed and Amazon have effectively removed the two main barriers to mobile services market entry, time and cost. With Affirmed's vEPC on AWS, mobile operators can easily deploy a complete mobile core, or select elements, in a short time without incurring high up-front costs. Mobile operators can start small—for example, testing a new service in regional markets—and quickly scale up as demand increases, paying more as they grow. The ability to right-size mobile services during the critical early phase of deployment allows mobile operators to accelerate their time-to-market for new services and offer those services at a competitive price point.

Five Ways That Affirmed on Amazon Can Grow Your Business

Why deploy Affirmed's vEPC solution on AWS? Because you'd rather be building up your subscriber and revenue base than building a virtualized network. Here are five ways that Affirmed on Amazon can jump-start your mobile services:



VoLTE and VoWiFi. Affirmed's vEPC solution provides a proven, tested platform for VoLTE and VoWiFi services. Using AWS as your hosted cloud, MNOs and MVNOs can quickly and cost-effectively launch voice services in new regions and expand their service footprint.



Roaming services. With Affirmed on Amazon, mobile operators can provide seamless roaming services by having centralized data centers with vEPC control plane in their home country and host vEPC user planes on AWS in visiting countries. This efficiently breaks out traffic in the regional/visiting AWS data centers instead of backhauling the user traffic to centralized data centers, reducing latency and providing exceptional quality of experience to roaming subscribers.



IoT and M2M applications. Many IoT/M2M applications are low-revenue services, requiring mobile operators to launch them at a lower cost in order to deliver IoT Services profitably. The Affirmed vEPC on AWS allows mobile operators to create, deploy and scale IoT/M2M services quickly and a cost point that allows them to grow the top and bottom line.



Backup and recovery. Adding redundancy to your mobile network infrastructure can be costly, with limited return on investment. With Affirmed's vEPC solution running on AWS, mobile operators can build geo-redundancy/resiliency into their network without buying and managing more hardware/data centers.



Market expansion. Breaking into new regional markets is expensive and risky—not only does it require an investment in hardware and data centers, but also an investment in local personnel to manage the network. With Affirmed and Amazon, mobile operators can quickly and cost-effectively test new markets and services by starting small and scaling as demand grows.

Reap the Rewards of Affirmed on Amazon

Affirmed's vEPC was born to run in the cloud, but it doesn't have to run on *your* cloud. By leveraging the global presence and legendary reliability of Amazon Web Services, you can become a heavy mobile *player*--just like the dozens of leading mobile service providers that have already deployed Affirmed's vEPC in their own networks—without being a heavy mobile *payer*.

When you deploy vEPC on AWS, you get the benefit of simplicity, scale and efficiency

Focus on real business transformation rather than virtual networks

Instead of building, installing and testing a mobile core, you can be building test cases for new revenue-generating services and deploying them in days.

Reduce your TCO by more than 70%

Mobile operators need to monetize low-revenue services in order to stay competitive and steal back market share from the competition. Affirmed's vEPC platform allows mobile operators to quickly deploy IoT and M2M applications, and AWS delivers them around the world at a lower entry price.

Increase your business agility

With Affirmed on Amazon, mobile operators can increase their business agility, from releasing new services into the market sooner to onboarding new customers faster.

Grow where opportunity takes you

Mobile operators can scale at the speed of demand with Affirmed's vEPC and AWS, whether the demand is for data-intensive applications such as mobile broadband services or session-intensive applications such as IoT services.

Affirmed and Amazon is an A+ Platform for Mobile Services

In the new mobile services economy, the fast will eat the slow. Mobile operators need to accelerate the speed at which they innovate while driving costs down, or risk market irrelevance. The arrival of 5G will bring with it increased opportunities for revenue as well as increased competition. Leading MNOs and OTT providers are already positioning themselves for cloud leadership in this new market. The time for discussion of mobile strategies has passed; it is a time for action.

With Affirmed on AWS, mobile operators can instantly compete with the leading mobile service providers on their own terms. Affirmed's vEPC provides the platform for rapid service creation and carrier-class delivery, while AWS provides the global cloud platform to deploy those services cost-effectively around the world. The result is a new kind of mobile network, delivered as a service without the cost and complexity of building out a network.

A world of opportunity awaits. Get there now with Affirmed and AWS.