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VMware pushes out its virtualization horizon as it extends Telco Cloud Platform to the RAN

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Summary

In April 2021, virtualization vendor VMware announced the expansion of its Telco Cloud Platform to support the radio access network (RAN) and edge aggregation sites. This marks the next step in VMware's strategy to provide a virtualization layer that can support any workload on any cloud in any part of the telecoms network. It has partnered with Intel to optimize the platform for Intel's FlexRAN software reference solution, and already provides support for solutions from RAN vendors Altiostar and Mavenir. VMware expects to expand this supported vendor ecosystem and the additional services it can offer service providers in the coming months.

In time for upcoming RAN decisions

VMware's announcement of the extension of its Telco Cloud Platform to the RAN comes at a key time in the convergence of RAN virtualization and open RAN. Where virtualization focuses on the disaggregation of RAN software from hardware, open RAN seeks to improve the interoperability of different RAN software and hardware components, allowing for greater vendor diversity in the RAN and faster innovation cycles. These two concepts are often taken together as mutually beneficial, if not always mutually inclusive, solution trends that are changing the RAN vendor landscape. As progress toward both virtualized and open RAN continues to drive so much of the industry news cycle, now is a good time for vendors looking to gain mindshare by outlining their vision and direction for how open and virtualized RAN deployments can converge. Contracts are also coming to the market as besides the obvious greenfield operator proponents of virtualized and open RAN Rakuten Mobile and Dish networks, Tier 1 operators like Vodafone are outlining their initial strategy for rolling out open RAN network deployments. In Vodafone's case, this includes migrating over 2,600 sites in the UK to open RAN deployments starting in 2022. These are not isolated cases according to Omdia's latest *Mobile Infrastructure Market Tracker* data, where Omdia expects the open vRAN market to grow from $298m in 2020 at 62.6% CAGR over five years to $3.4bn in 2025.

However, what if open RAN specifications, development for which is largely being led by the O-RAN Alliance, take longer to materialize or be purchased by network operators? Howard Watson, Chief Technology Innovation Officer (CTIO) of BT, one of Vodafone UK's rivals, is on record saying that he does not expect open RAN to play a prominent role in BT's mobile network until at least 2027. In these cases, VMware still sees an opportunity for its RAN Telco Cloud Platform as a unified platform to support an operator's traditional RAN vendors even if an operator follows a traditional deployment pattern whereby network vendor A's equipment covers one part of a country or region and network vendor B's solution covers another part of the country. The rationale is that VMware sees network operators, regardless of the "openness" of the vendor solutions in their network, are still pushing their vendors to disaggregate RAN functions like those governing the centralized units/distributed units (CU/DU) from specialized hardware in favor of commodity hardware solutions. By then consuming these traditional vendors' RAN software solutions on VMware's telco cloud layer, VMware argues it will facilitate operators' swap-in of new RAN vendors' software should operators wish to change vendors, all while utilizing VMware's telco cloud automation, analytics, and integration services.

Partner ecosystem is key for VMware's RAN momentum

For the core network, VMware's Telco Cloud Platform already supports more than 200 virtual network function (VNF) and containerized network function (CNF) workloads from around 75 different providers, including the likes of Cisco, Ericsson, Huawei, Nokia, and ZTE. This gives it a critical mass of choice to offer its network operator customers, and from which VMware drives a great amount of value for its customers looking to consume a variety of networking solutions. The breadth and depth of this ecosystem emphasize VMware's current virtualization credentials and the value it also offers partners that are hosted on the core platform. Assuming VMware can replicate this value for its RAN partners, it should be able to build a comparable RAN ecosystem that will in turn drive similar levels of value for its operator RAN customers. VMware has a promising starting point as both Altiostar and Mavenir vRAN workloads are already onboarded to the Telco Cloud Platform. Altiostar and Mavenir have been gaining industry recognition for their vRAN credentials, with both being chosen by Dish to supply RAN software for its US nationwide 5G network, which VMware is also supporting.

VMware could build considerable momentum behind its RAN telco cloud offering if its next steps include the onboarding of software solutions from one or several of RAN's largest vendors such as Ericsson, Nokia, or Samsung. Together, these vendors currently account for just under 50% of the RAN market. Once VMware can confirm one or several of these vendors' RAN solutions are available on its Telco Cloud Platform, it will greatly increase its potential market impact. Considering that of these three vendors Nokia and Samsung have been the loudest supporters for open RAN, it would not be surprising if they were the first to announce their RAN solutions were available on VMware's Telco Cloud Platform.

A final piece of the puzzle is how VMware is partnering with hardware vendors to support software solutions for the RAN. In this, VMware has partnered with Intel since August 2020 to use its FlexRAN reference architecture to optimize VMware's platform for the RAN environment, which is more resource- and space-constrained than the network core. This partnership with Intel has more recently been mirrored by VMware's hyperscale rival Google Cloud Platform (GCP), which announced its partnering with Intel and use of FlexRAN specifications to provide platform solutions for the RAN in February 2021.

All eyes on Dish for VMware's RAN reference customer

Finally, for those in the industry looking to see how VMware's solution will deliver for its customers, Dish's 5G network buildout is where they may first see the evidence of the solution's effectiveness. VMware was announced as part of Dish's open RAN vendor picture in July 2020 and can expect to see plenty of coverage on Dish 5G RAN rollout as the operator seeks to cover 70% of the US population with its 5G network by June 2023. Considering the highly competitive nature of the US market, the tight network rollout timescale, and Dish's greenfield network characteristics, if all goes well it should provide the perfect platform for VMware to showcase not only its virtualization characteristics but newer capabilities around network automation and monetization as well, as VMware continues to build out its offerings to support any workload on any cloud in any domain.

Appendix

Further reading

Mobile Infrastructure Market Tracker – 4Q20 Data (March 2021)

"What the Google/Intel partnership means for the carrier network software ecosystem" (February 2021)

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