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Juniper Announces a Carrier-Grade vMX Virtual Router; Advances Programmable Platform with Contrail Cloud Ecosystem and New Junos DevOps Framework

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On November 6, 2014, Juniper announced an expansion of its flagship MX router portfolio to include a new virtualized vMX virtual router platform that will be supported on x86 servers and run on Junos OS. Juniper's strategy is to be able to offer a flexible networking platform solution to communication service providers (CSPs), cloud service providers, and large enterprises providing the flexibility to optimize the use of physical, high-performance routing and virtual routing from a single platform. With this new addition to Juniper's portfolio, service providers can transition their existing networks to leverage new virtualization technology and software to be able to offer more on-demand, cloud-based services and deliver the right mix of dedicated and variable communication services to their end users. AT&T and Colt are two of Juniper's existing MX customers that are testing the vMX as part of their respective software-defined and network virtualization architectures. The vMX is scheduled for 1Q15 availability.

The vMX, like its companion MX 3D series router platforms, will leverage the installed base of Junos software and use the same software versions for both the vMX and MX. The vMX router will provide up to 160Gbps of unidirectional throughput based on this new x86 server architecture. The MX also supports carrier-grade features like MPLS and tools for provisioning, system setup, and management. For certain cloud service workloads, the vMX will be a good fit and it will be interesting to see use cases for vMX and the mix of vMX and MX configurations in the coming months.

The vMX will also leverage Contrail Networking (rebranding of Juniper's Contrail programmable SDN controller) and a new product called Contrail Cloud, which is an OpenStack-based cloud resource orchestration platform that brings together compute, network, storage, and virtualization into a common management system. Juniper is positioning the combination of Contrail Networking and Contrail Cloud as a framework and ecosystem that can enable the delivery of turnkey end-to-end NFV solutions. For CSPs, this will help shorten service creation cycle time and enable the creation of new NFV software-based services — vCPE, vFirewall, and other vWAN services. Together, these Contrail software capabilities will allow CSPs to create, provision, deliver, and change services in a more dynamic fashion reducing time-to-service intervals. Juniper's first NFV product is a virtualized security suite that includes Juniper's Firefly perimeter product (firewall, IPS, and antivirus). To enable the delivery of this and other turnkey NFV solutions, Juniper is partnering with Amdocs Ltd., Akamai Technologies Inc., Canonical, and other companies. Contrail Cloud will be available at the end of 2014.

Juniper also announced Junos Continuity, a set of new Junos DevOps capabilities to deliver a programmable foundation for providers of network infrastructure, which fulfills the companys commitment last September to deliver on a vision of an open, programmable networking platform environment. Junos Continuity will allow network operators to add hardware features and upgrades without having to update the operating system. Continuity will be available in March. Juniper is adding support for configuration management tools including Puppet, Chef, and Ansible, as well as programming languages Ruby and Python, to unify IP and IT into a converged telco cloud environment.

Juniper's High-IQ Strategy: Will vMX Be a Disruptor?

The vMX announcement, along with the Contrail Cloud and Junos Continuity, is a significant proof point that demonstrates how Juniper has executed on its High-IQ Networking strategy to enable CSPs and cloud service providers to create scalable, automated, and differentiated services. Juniper is capitalizing on the significant carrier traction of the adoption of NFV, open platforms, and network virtualization architecture

within a leading number of CSPs, including DT, Telefonica, BT, Verizon, AT&T, NTT Communications, CenturyLink, Level 3, Colt, Tata Communications, China Mobile, TELUS, and Telstra.

Juniper's move to position the vMX alongside of its larger MX "big brother" may signal that the time for software-defined routers has arrived. Or is it a clever strategy to capitalize on the CSPs' requirement for a change in how they create, deliver, and provision these virtual and non-virtual services? Underlying the vMX announcement is the significant investment that Juniper is making in software and network orchestration, programmable APIs, and DevOps, which are essential tools for CSPs to leverage the full benefits of an NFV and SDN carrier implementation.

Juniper's strategy to increase its software revenue contribution from these new products will depend on the success of its new software licensing schemes. Juniper plans to offer several schemes to drive future software-driven revenue that will align with its customers' own plans. For example, if a CSP's purchasing and budgeting is capex centric, it may prefer a perpetual license, or alternatively, if it relies on an opex business model, it ay prefer a subscription-based annual license. There may be other schemes as well that may include revenue sharing, bandwidth/feature usage, or use cases where the number of VNF licensed services per CPE factor into this.

The key opportunity for Juniper is to manage the transition in the market and continue to generate growth in Juniper' physical MX router revenue, as well as generate revenue growth in the software-based vMX platform and avoid the potential pitfall for CSPs to substitute the vMX for all use cases. It will be important for Juniper to work closely with CSPs to establish a benchmark and criteria for the appropriate mix of vMX and MX and service use cases to help CSPs leverage their network capex and opex expenditures.

As Juniper's strategy plays out, there will be interesting repercussions to the overall carrier routing and switching market segment. Will Juniper's strategy force the other leading carrier router vendors such as Cisco, Alcatel-Lucent, and Huawei to change their product strategy? Juniper will also benefit from CSPs developing interest in evaluating virtual routing and recent announcements from Brocade on its Vyatta virtual router platform. With vMX, Juniper becomes the first of the major carrier router equipment vendors to announce a comprehensive virtual router portfolio within the same platform that leverages existing software.

Future Outlook

Juniper has clearly articulated a broad company strategy where it is moving from a hardware engineering focus to a balance of hardware and software architectures, a proof point that it has taken the lead with packaging and licensing its vMX, Contrail Networking, Contrail Cloud, and Junos DevOps software targeting the emerging NFV-based services that CSPs are evolving toward. Juniper will need to continue to work more closely with OpenStack and other partners as part of its Contrail Cloud initiative, which includes NSN, and leverage its orchestration relationship with Amdocs, IBM, and others to develop a stronger integrated strategic network virtualization solution portfolio that appeals to more than CSPs. It is certainly crucial for Juniper to retain and grow market share in the CSP segment, and Juniper will have to continue to be aggressive in deploying service trials such as AT&T and Colt by articulating specific benefits of NFV and SDN use cases with real proof points.

For CSPs, network virtualization and service automation are both a challenge and a necessity if they are to make the shift to the next-generation business models where "services" are a key differentiator. To be able to do that, the infrastructure elements (network, storage, and servers) have to be delivered as services and therefore advances in broad virtualization capabilities will become table stakes. Juniper, through its software and network virtualization strategy, appears to be one of the leaders in the network industry to make this transition.

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