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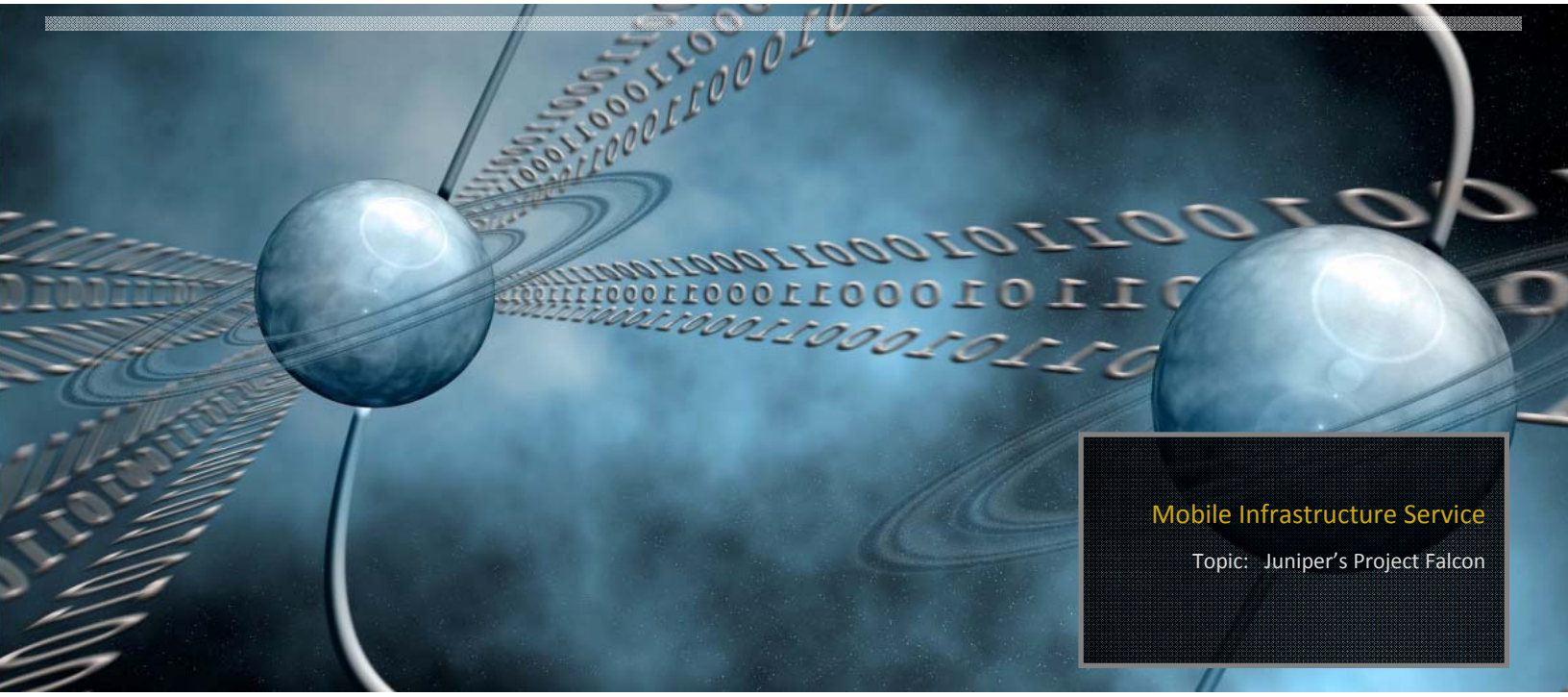

Juniper Networks Soaring into the Mobile IP Market with Project Falcon

With mobile operators announcing LTE deployments beginning in late 2010, the race for market share is on among the major equipment vendors. However, with the arrival of LTE we will see some fundamental changes in the way that mobile networks are built. LTE is the first 3GPP radio technology that is all-IP end-to-end with no circuit switching. This places a premium on IP technology and expertise and presents an opportunity for the major IP vendors to play a much more significant role in the mobile industry going forward; Juniper Networks is one such vendor.

Today, their routers are used to build out the wired Internet, and they are positioning themselves to do the same for the mobile Internet. The company's recently announced Project Falcon leverages its very strong position in edge routing, its Junos SDK (which enables customers and partners to develop applications that run on its mobile gateways), and its suite of mobile gateway software. Juniper is banking that with Project Falcon it can reduce the total cost of ownership of mobile core equipment while at the same time provide much greater capacity and performance to address the traffic load created by new devices and applications.

Key Takeaways

- Juniper is counting on its IP expertise to penetrate the mobile infrastructure market.
- Juniper's packet core products will leverage its MX 3D Universal Edge Router.
- The Junos SDK allows customers and partners to develop compelling new applications for the mobile core
- Juniper's goal with Project Falcon is to help LTE providers reduce network operating costs, while at the same time dramatically improving performance.

Project Falcon

THE DECISION

Juniper has realized that the move to HSPA and LTE will create the inflection point required to enable the company to enter the mobile packet core business. Juniper has a solid track record in IP routing. The company's carrier grade routers are already installed in the backbones of many tier 1 mobile operators. These operators are familiar with Juniper's technology, and as mobile networks become more IP centric, they will look to Juniper for support. After all, their operations teams are already familiar with Juniper technology, and they will want to leverage their existing relationship going forward. Juniper knows what is needed to enable the convergence of mobility and the Internet and can help mobile operators lower their costs while positioning them for data revenue.

BACKGROUND

Project Falcon is the name for Juniper's mobile infrastructure portfolio. Project Falcon will be based on the Juniper MX 3D Universal Edge Router. Software is being developed that runs on Junos to enable the MX to become an S/P Gateway for 4G networks and a GGSN for 3G networks. To help accelerate innovation in the mobile core, Juniper is leveraging the Junos SDK to enable customers and partners to develop compelling new applications for the Evolved Packet Core (EPC).

Juniper's Junos SDK software lets network operators tap into a host of interesting new revenue opportunities. Juniper is already working with third-party vendors on applications such as ad insertion. The open SDK approach will promote far more innovation than would be the case if the EPC vendor had to do all the development.

With Project Falcon, Juniper is also addressing the industry trend toward a much more distributed mobile packet core. The Traffic Direct solution or, in reality, traffic redirect addresses carrier pain points by providing a very flexible technique for steering traffic within the mobile core.

Juniper will build on the Traffic Direct concept as the mobile core becomes more distributed. The idea here, which is not unique to Juniper, is to move some of the GGSNs or S/P-GWs out to regional data centers or possibly even mobile telephone switching offices (MTSO). This would greatly reduce the amount of traffic that is flowing back to national data centers. This approach is mainly used to offload traffic headed directly to the Internet. The control plane entity, which is the SGSN or MME, would make a decision based on the device type.

Feature phones would be directed to a GGSN at a national data center where the WAP gateways are located. For laptops and smartphones, the SGSN or MME will route the traffic to the nearest offload point where a GGSN or S/P Gateway would hand it off to the Internet.

Juniper's Junos SDK software can potentially add another level of differentiation where the traffic flow can be modified based on a number of customizable variations, depending on the operator or the application vendor.

While there are many advantages associated with moving the mobile gateways out to the edge, there are also some challenges associated with this approach. Foremost among them are the operational challenges that come with such a change.

IP expertise will now be required in many more locations then in the present method of operation. Juniper can help address this issue through their ability to consolidate many related functions into the gateway. This list includes things such as firewalls, NAT functionality, PE gateways, SBC, etc.

Bill Rubino, Principal Analyst
brubino@acgresearch.net

THE FUTURE

Network operators have to assess if Juniper can compete against companies that have both RF and IP expertise.

These vendors can offer a complete turnkey solution with both radio and IP. The advantage for operators is that they only need to deal with one vendor.

Many tier 1 operators prefer a multi-vendor approach to network architecture. They look to radio vendors for RF and IP vendors for networking expertise. Juniper's IP expertise, strong portfolio of switches and routers, and broad deployments in carrier networks worldwide should position it well with mobile operators that are looking for a best-in-class solution. However, they will be at a disadvantage if operators want a vendor to provide the complete solution. This is not a huge negative because a majority of tier 1 operators deploy multi-vendor solutions.

As the momentum shifts from LTE trials to commercially available networks, Juniper will need to show acceptance in the mobile core and convince mobile operators that its IP expertise trumps time to market.

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+ 408.200.0967