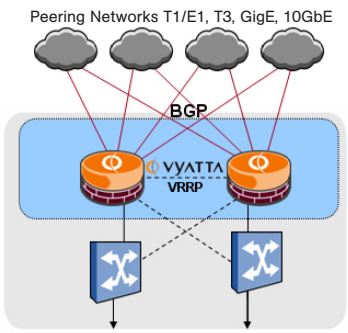
Application Brief: Service Provider BGP

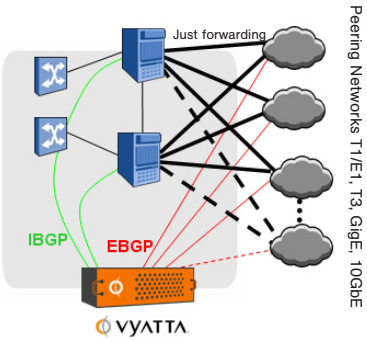
Vyatta for BGP Scalability at the Service Edge

With a single full BGP feed today being over 240,000 routes, fulfilling memory requirements to add new peers or keep up with growing BGP tables can be an expensive proposition. Traditional router offerings used for BGP routing typically require expensive proprietary memory upgrades and are limited in terms of memory capacity. Vyatta open networking leverages standard x86 hardware to allow network operators to scale BGP requirements well beyond the limitations of proprietary systems and for a fraction of the price. Vyatta also offers network administrators the option of deploying as a traditional WAN router or as a route reflector.

BGP WAN Edge Router



BGP Route Reflector



Price Comparison			
	Vyatta 3510	Cisco 7204	Cisco ASR 1000
Base Platform	$4,595	$25,000	$30,000 - $85,000
Maintenance & Support	1yr included	$2,756	$1,600-$2,000
Total Complete System	$4,595	$35,756	$31,600 - $87,000

up to 95% Vyatta Savings

Features and Performance			
	Vyatta 3510/3520	Cisco 7204	Cisco ASR 1000
Base Memory (GB)	2/3	1	4
Max Memory (GB)	8	2	4-16
Route Capacity	4,500,000 (~18 peers)	3,020,000(~12 peers)	unknown
BGP Convergence Time (Sec)	13	30	unknown
Throughput pps	3,000,000	2,000,000	4,000,000
10Gbps capable	Y	N	1004, 1006 only

1.5x Vyatta Advantage
2x Vyatta Advantage

The Vyatta Advantage:

- >> Advanced routing and security feature set
- >> 1.5x Route Capacity
- >> Leverage off-the-shelf memory for scaling
- >> Open source extensibility
- >> More than 2x faster BGP convergence
- >> Greater memory capacity for increased performance and scalability
- >> Choice of standard x86 hardware and components
- >> Up to 95% cost savings over Cisco ASR 1000 equipment

BGP Edge Routing Features		
IP Routing Protocols	» IPv4 » RIPv2 » OSPFv2 » BGPv4 » IPv6	
High Availability	» VRRP » Protocol fault isolation » Redundant hot swap power » RAID / Redundant hot swap disks	
Encapsulations	» Ethernet » 802.1Q VLANs » PPP » PPPoE » IP in IP	» Frame Relay » MLPPP » HDLC » GRE
Interfaces	» 10/100/1000 Ethernet » 10Gb Ethernet » 3G Modem » T1/E1 1 /2 / 4 port » T3 » X.21 and V.35	

Sources:
Tolly Group: Vyatta vs. Cisco 7204 BGP Performance - http://www.vyatta.com/downloads/whitepapers/Tolly208289VyattaBGPPerfMar2008.pdf
Intel Quad Core Routing Benchmark - http://edc.intel.com/Download.aspx?id=2977&returnurl=/default.aspx
http://www.cdw.com - Cisco pricing
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