Packet Expert

Kashif Nawaz – JNCIEs (SP & Sec), RHCE and CKA

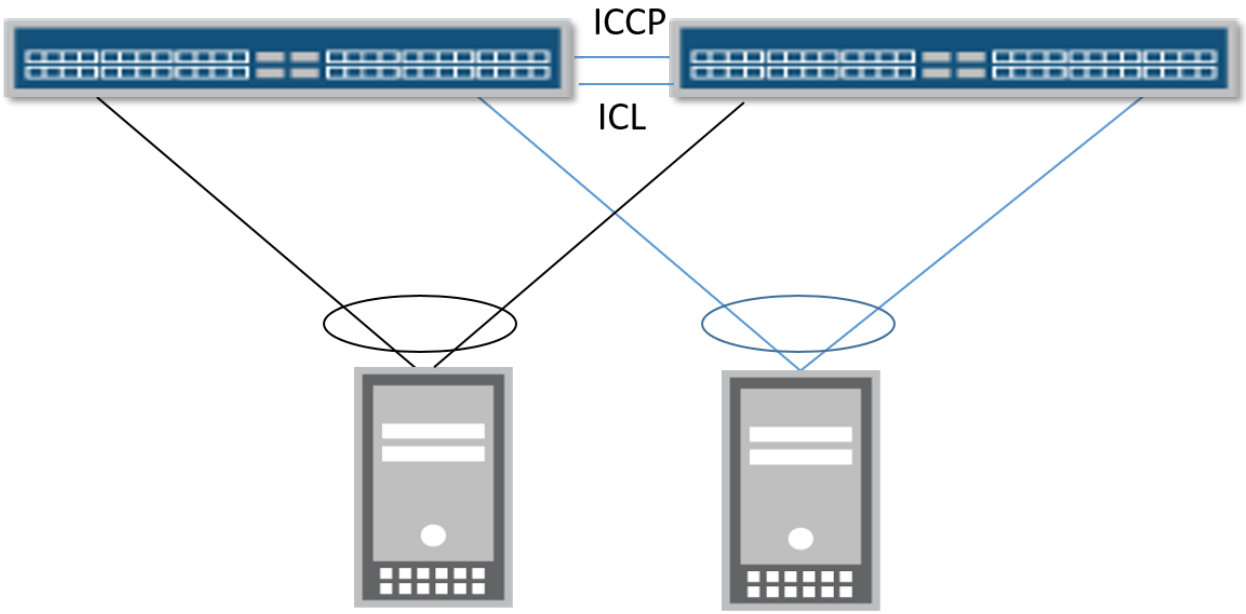
DATA CENTER

Blade Chassis to End of Row Switches Connectivity & High Availability Options

Rack Mounted Servers using pass-through Module

Active/Active NIC Teaming on Rack Mounted Servers

MC-LAG for EOR Switches



Date: October 14, 2016 Author: packetexpert 2 Comments —

Spanning Tree Protocol (STP) free network inside Data Center is main focus for network vendors and many technologies have been introduced in recent past to resolve STP issues in data center and ensure optimal link utilization. Advent of switching modules inside blade enclosures coupled with the requirements for optimal link utilization starting right from blade server has made today's Data Center network more complex.

In one of earlier blog I discussed design guidelines for port bundling/ active-active NIC teaming between Juniper Virtual Chassis Fabric (QFX 5100 VCF) and Rack Mounted Servers, however few questions were still un-answered.

Q-1. What if Virtual Chassis option is not available, specifically in the scenarios where Juniper EX 9200 / QFX 10K Chassis based switches are deployed as End or Row switches.

Q-2. What if, instead of Rack mounted servers blade chassis enclosure (equipped with switching module) are used as compute machines and there is requirement for active/ active or active/ passive NIC teaming on blade servers. How the overall network will look and work right starting from blade server NIC.

This blog will answer these questions:-

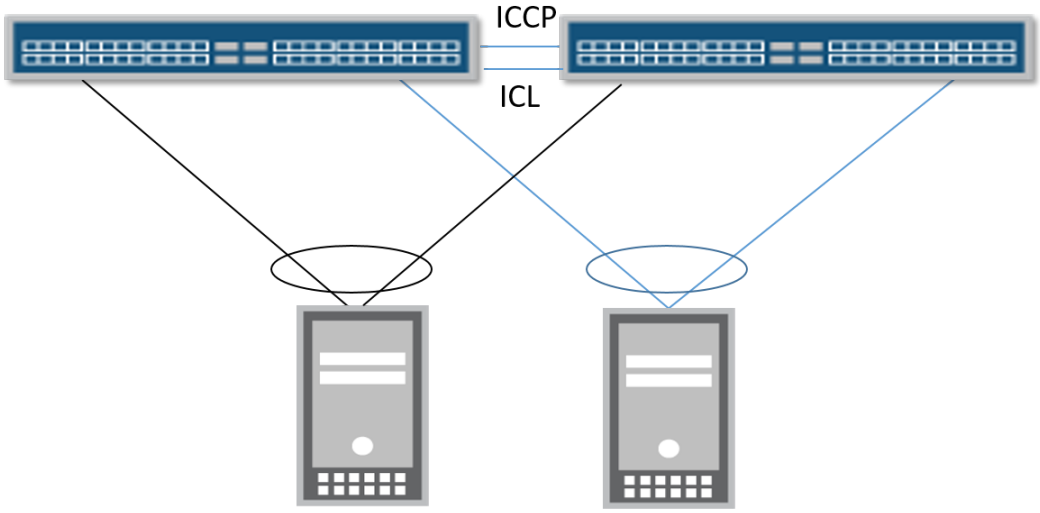
Assumption:- Network Switches are placed as End of Row model and to cater for STP Multi-Chassis Link Aggregation (MC-LAG) is deployed. Please see one of my earlier blog for understanding of MC-LAG.

Option 1: Rack mounted servers for computing machines, servers have installed multiple NICs in Pass-Though module and Virtual Machines hosted inside servers require Active/Active NIC Teaming.

Rack Mounted Servers using pass-through Module

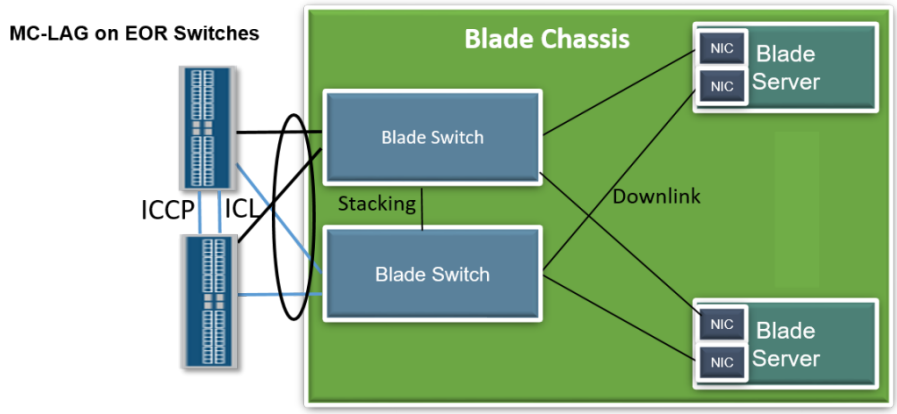
Active/Active NIC Teaming on Rack Mounted Servers

MC-LAG for EOR Switches



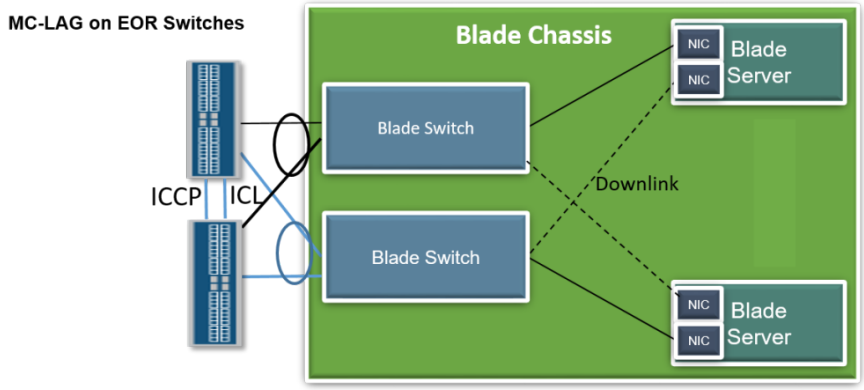
Option 2 : Blade Chassis has multiple blade servers and each blade servers has more than 1 NIC (which are connected with blade chassis switches through internal fabric link). Virtul Machines hosted inside blade servers require active/active NIC teaming.

Blade Chassis with Chassis Switches and Blade Servers
Active/Active NIC teaming on Blade Servers required
Stacking required between blade chassis switches
MC-LAG on EOR Switches



Option 3 : Blade Chassis has multiple blade servers and each blade servers has more than 1 NIC (which are connected with blade chassis switches through internal fabric link). Virtual machines hosted inside blade servers require active/passive NIC teaming.

Blade Chassis with Chassis Switches and Blade Servers
Active/Passive NIC teaming on Blade Servers required
MC-LAG on EOR Switches



Published by packetexpert

Every new second is coming up with some innovation in the IT industry , the basic and foremost important building block behind all technology innovations and updates is the "PACKET". I always endeavored to understand packet anatomy started from switch access port , securing it and then further traversing through IP/ MPLS network till its destination. During my journey to understand packet anatomy I achieved 2 x JNCIEs (SP and Security) and currently learning Open-stack and SDN besides bit of automation stuff using Python.
View all posts by packetexpert

2 thoughts on “Blade Chassis to End of Row Switches Connectivity & High Availability Options”

Add Comment

1. **Muhammad jamshed says:**
   October 15, 2016 at 4:05 am Edit
   Thanks for very informative blog,
   I have Questions here does the dotted lines represents internal fabric connectivity of NICs?

   Reply
   1. **packetexpert says:**
      October 15, 2016 at 7:47 am Edit
      Hi, Jamshed thanks for appreciation. Dotted line you highlighted was nothing but just a drawing mistake. I have updaed the images (thanks for notice)

      Reply