

ASR5500: MIO/UMIO Port Connections for Best Port Utilization Balance

Contents

[Introduction](#)

[Problem](#)

[Solution](#)

Introduction

This document describes the port connections of the Link Aggregation Group (LAG) on Management I/O (MIO) or Management I/O Universal (UMIO) cards in Aggregation Services Router (ASR) 5500 in order to achieve the best port utilization balance.

Problem

There are two general configuration models for LAG in ASR 5500:

- Redundant Configuration Model in which the ports from one MIO/UMIO card is passing traffic at the time.
- Non-Redundant (All Active, Active/Active) LAG configuration in which the ports from both MIO/UMIO cards are connected to the same switch.

Please refer to [ASR 5500 System Administration Guide for ASR 5500 System Administration Guide](#).

The Equal Cost Multiple Path (ECMP) is responsible for the egress path and it evenly distributes the traffic over multiple links in the egress path.

Solution

In most case of Non-Redundant (All Active, Active/Active) LAG configuration, the customer will have 2 LAG bundles (L1, L2) in order to provide router redundancy.

If non-LAG ports are needed, the last port of each NPU should be considered first (14, 19, 24, 29), this way it will allow LAG size to grow without affecting the non-LAG ports.

The recommended configuration provides the best Network Processing Unit (NPU) utilization as well as best port utilization balances. The same recommendation also applies for ECMP over 2 Active/Standby LAG Groups.

Number of LAG Groups	Number of Ports Per LAG Group	Recommended Port Configuration 5/X, 6/X
		5/10 is Master of L1, 5/11 is Master of L2

2	2	L1: 10, 15 L2: 11, 16
2	3	L1: 10, 15, 20 L2: 11, 16, 21
2	4	L1: 10, 15, 20, 25 L2: 11, 16, 21, 26
2	5	L1: 10, 15, 20, 25, 12 L2: 11, 16, 21, 26, 13
2	6	L1: 10, 15, 20, 25, 12, 17 L2: 11, 16, 21, 26, 13, 18
2	7	L1: 10, 15, 20, 25, 12, 17, 22 L2: 11, 16, 21, 26, 13, 18, 23
2	8	L1: 10, 15, 20, 25, 12, 17, 22, 27 L2: 11, 16, 21, 26, 13, 18, 23, 28
2	9	L1: 10, 15, 20, 25, 12, 17, 22, 27, 14 L2: 11, 16, 21, 26, 13, 18, 23, 28, 19
2	10	L1: 10, 15, 20, 25, 12, 17, 22, 27, 14, 24 L2: 11, 16, 21, 26, 13, 18, 23, 28, 19, 29