Much awaited LACP enhancement – vSphere 5.5

In vSphere 5.1, LACP implementation has some constraints and those were:

- Supports only one LAG per VDS per host.
- All uplinks in the dvuplink port group are included in this LAG.
- Only the IP hash load balancing algorithm is supported.

So essentially what we were missing are:

- Multiple LAGs per host.
- Multiple load balancing options.

Before I move onto how vSphere 5.5 has resolved these constraints, let me reiterate few basics about LACP.

LACP – Link Aggregation Control Protocol is a standards-based method (IEEE 802.3ad) to control the bundling of physical network links to form a logical channel for increased bandwidth and redundancy purposes.

LAG – A Link Aggregation Group is a grouping of multiple individual links – with compatible properties – formed into a single logical channel. This can be a manual process or performed by a controlling protocol such as LACP.

Hashing Algorithm – The hashing algorithm determines the LAG member used for traffic. LACP can use different properties of the outgoing traffic (e.g. source IP/Port number) to distribute traffic across all the links participating in a LAG.

LACP is installed as a kernel module and user world daemon **lacp_uw**. The module will be automatically loaded and the daemon executed after the host boots.

Now let me show you a typical setup to make you understand what is the enhancement VMware has made in version 5.5
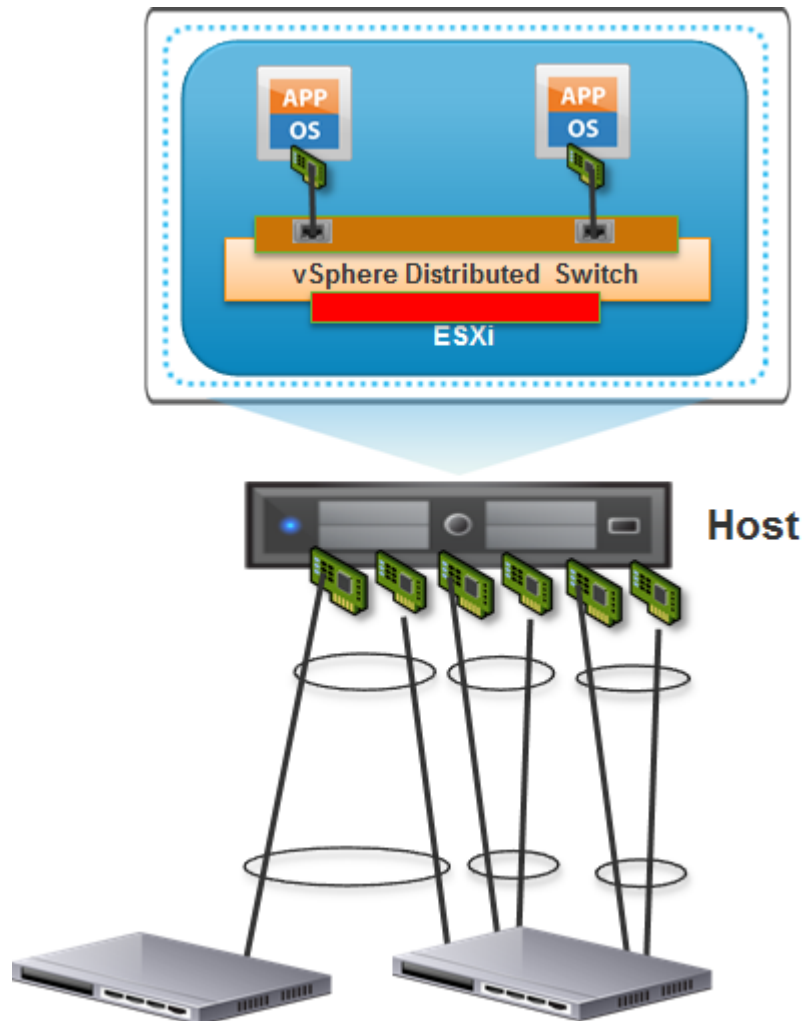
But Why do you need multiple LAG?

- DC networks moving towards 10GbE, which require **multiple** etherchannels
- Hosts with mix of 1GbE and 10GbE NICs need multiple etherchannel support

Enhancement In vSphere 5.5

- Support multiple LACP LAGs
- Max 32 LAG per Host
- Max 64 LAG per VDS
- Support all supported hashing algorithms in LACP (22)

LAGs are composed of new LAG uplinks. Each physical NIC (vmnic) taking part in the LAG is assigned to a single LAG uplink.

Note: Uplinks must be going to either the same switch or a pair of switches appearing as a single logical switch (using vPC, VSS, MLAG, SMLT, or similar technology).