draft-omar-alsp-00
Internet-Draft
Intended status: Standard Track
Expires: October 16, 2020

Khaled Omar
The Road

April 16, 2020

ASN Label Switching Protocol (ALSP) Specification draft-omar-alsp-00

Status of this Memo

Copyright Notice

Abstract

This document specifies ASN Label Switching Protocol (ALSP).

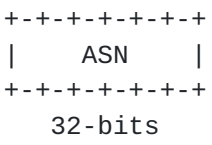
Table of Contents

1. Introduction

- ASN Label Switching Protocol (ALSP) is a wide-area network (WAN) protocol that is used to connect an Enterprise's local-area networks (LANs) through Service Provider's network.
- ALSP can be used to connect different Enterpises' networks as well that uses overlapped private IPv4 addresses.
- ALSP depends on the unique ASN assigned to each organization.
- ALSP is similar to the MPLS concept but much more simpler.

2. ALSP Header

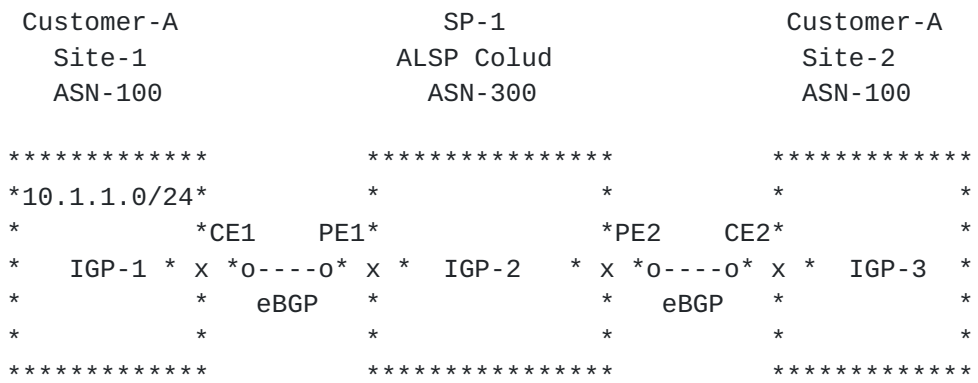
- ALSP adds the following header to the IP packet:



- ASN is the Autonomous System Number.

3. ASN Label Switching Protocol (ALSP)

- Consider the following two enterprise sites that are connected through an ALSP Cloud of routers:



Sample Network for Connecting an Enterprise with Two Sites

Where:

- CE: Customer Edge.

- PE: Provider Edge.
- ASN: Autonomous System Number.
- IGP: Interior Gateway Protocol.
- eBGP: External Boarder Gateway Protocol.

- CE1 has ALSP enabled on the interface connected to PE1.
- Similarly, CE2 has ALSP enabled on the interface connected to PE2.
- Also, all the ALSP cloud routers have ALSP enabled globally.
- ALSP enabled interface means that the IGP or EGP advertisements through this interface can have the ALSP header which is the ASN configured on the IGP or EGP.
- Consider that Customer-A's Site-1 has a subnet 10.1.1.0/24 that needs to be advertised to Site-2.
- The 10.1.1.0/24 subnet is learned by CE1 through IGP-1.
- The engineer first should advertise this subnet through BGP and MUST configure the ASN so it can be added to the advertised update messages.
- When PE1 receives the BGP update with ASN 100, if it doesn't have a VRF table for ASN-100, AUTOMATICALLY it will create a VRF instance with a naming convention VRF-ASN, so in this case it will be VRF-100.

- Now, PE1 has a VRF-100 table with 10.1.1.0/24 learned by BGP.
- The engineer MUST redistribute BGP into IGP-2 and adds the ASN of Customer-A to the configuration.
- Through IGP-2, all routers within ASN-300 will learn about the subnet 10.1.1.0/24.
- Each router within the ALSP cloud receives the update takes one of the following actions:

  a) If there is no VRF table for that ASN, it will create one and add the learned subnet to that VRF table.
  b) If there is already created VRF table for that ASN, it will only add the learned subnet to that VRF table.

- Now, consider that PE2 received the update through IGP-2 and it has not any VRF for that ASN that is associated with the update message, it will create a new VRF table called VRF-100 and add 10.1.1.0/24 to that table.
- Now, the engineer should advertise 10.1.1.0/24 subnet to CE2 using BGP and MUST configure the ASN of that VRF.
- When CE2 receives 10.1.1.0/24 subnet with ASN-100 in the header via BGP, the engineer MUST redistribute the BGP learned subnet into IGP-3 normally.

Security Considerations

Acknowledgments

Author Address

Khaled Omar Ibrahim Omar
The Road
6th of October City, Giza
Egypt

Phone: +2 01003620284
E-mail: eng.khaled.omar@hotmail.com
National ID No.: 28611262102992

References

Full Copyright Statement

THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.