Carrying VTN-ID in IPv6 Extension Header

draft-ietf-6man-enhanced-vpn-vtn-id-00

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Background and Current Status

• This document introduces a mechanism to carry VTN information in IPv6 HBH extension header
  • Used by transit nodes on the path to steer packets to the set of network resources allocated to a VTN

• The document was adopted before IETF 113
  • Valuable comments and discussion during the adoption call
  • Many of the comments have been resolved in the mail list discussion

• The authors would like to pick some of the comments for discussion and hear further feedbacks from the WG
  • Then the document will be updated accordingly
Comment #1: The Terminology

• Whether call it VTN resource ID, or NRP ID, or something else?
• According to the terminology definitions in TEAS
  • NRP (Network Resource Partition) is a set of network resources allocated in the network
  • VTN (Virtual Transport Network) is a virtual underlay network consisting of a set of network resources and associated with a network topology
• It seems VTN resource ID and NRP ID refer to the same thing
  • TEAS WG is working on the alignment of the terminologies, this document could follow the decision made in TEAS
• It also depends on whether and how we want to extend the semantics and format of this ID
  • See the discussion in following slides
Comment #2: Processing Procedures

• If a node skips the HBH EH, it cannot apply the policies required for the VTN
• If strict conforming to VTN specific processing is required, it is recommended to make sure all the network nodes involved in a VTN can process the HBH EH and the VTN option
• The capability of the network nodes can be obtained via management system or control plane advertisement

• How to process the packet if a transit node does not have the network resource matching the VTN?
• Consider to use a Flag to determine the forwarding behavior in this case
  • When the flag is set, it indicates packet SHOULD be dropped when there is no matching resources for the VTN
  • When the flag is not set, it indicates packet SHOULD be processed using the default set of resources, i.e. fall back to best effort processing
Comment #3: the Format of VTN Option

• Suggest to make this “Tag” generic and flexible
  • In addition to network slicing, other use cases would also benefit from it
  • Allow variable length for this 'tag'
  • Introduce structure to this HBH option

• Some considerations about the semantic and format
  • This ID is considered as a network-wide identifier
  • Align with draft-ietf-6man-hbh-processing in the new HBH option design
    • Straight forward to process
    • The option size should not extend beyond the capability of network node’s forwarding plane
  • Provide reasonable extensibility to this Option
    • Option Data Len field: can be used to indicate variable length of the value field
    • Introduce a Flag field: Allow to use flags to indicate the behavior when processing the ID field
    • Introduce a Reserved field: Leave some room for future extensions
    • ID field: Carry the ID with variable length?
Next Steps

• Collect feedbacks from the WG on the above discussion points

• Update the document accordingly