nvo3 architecture report

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nvo3: Where are we going?

• Currently at principles stage
  – Framework, Requirements drafts

• Goal: Network virtualization solutions
  – Protocols that pass traffic
  – Control, OAM and other related protocols

• Reality: Solution approach diversity
  – Next slide ...
Solution Categories (simplified)

<table>
<thead>
<tr>
<th>Network Service</th>
<th>Data Encapsulation (NVE)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>no MPLS (IP-based)</td>
<td>MPLS-based</td>
</tr>
<tr>
<td>L2 (Ethernet)</td>
<td>Yes (1)</td>
<td>Yes (2)</td>
</tr>
<tr>
<td>L3 (IP)</td>
<td>??? (4)</td>
<td>Yes (3)</td>
</tr>
</tbody>
</table>

[MPLS/GRE/IP is an MPLS encapsulation, ditto MPLS-in-UDP]

1. IP encap + L2 service: VXLAN, NVGRE, etc.
2. MPLS encap + L2 service: L2VPN
3. MPLS encap + L3 service: L3VPN
4. IP encap + L3 service: Not sighted in nvo3 ... yet?

Want commonality within & across categories (nvo3 = one WG)
  [All categories are in scope for nvo3, this isn’t about picking one]
Commonality

• Framework draft: Good start
• But: We don’t understand everything, yet.

• Living document is desirable
  – Capture solution-independent decisions
  – Support gap analysis and applicability statements
  – More functional detail than is in framework draft
Living Document: Possible Content

• Functional components, protocols and interactions
  – Components and protocols – what do they do?
  – What can vs. can’t be mixed/matched?
  – Based on framework draft’s components

• Design decisions
  – The WG has decided that “X” works this way (or “X” and “Y” interact in this fashion) because ...

• Major structure and functionality alternatives
  – Structure example: Embedded vs. external NVE
  – Functionality example: L2 vs. L3 service
Proposed next steps

• Architecture discussion on list:
  – Focused topics will be teed up for discussion

• Q: When is a topic “architectural”?
  – A: When it impacts multiple solution categories

• Q: What will architecture do with each topic?
  – A: Compare/contrast alternative structures
  – Decide on what nvo3 will support (preferably one)

• List Discussion: What topics need attention?
  – Strawman list of topics on next slide
LIST: Topics that May Need Attention

• Data Plane
  – Setup/discovery
  – Data plane vs. control plane learning

• Control Plane
  – Push vs. Pull
  – Centralized vs. Distributed vs. mixture
  – Setup/discovery

• Management Plane