NVO3: Network Virtualization
Thomas Narten
narten@us.ibm.com

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NVO3 BOF^h^h^h Info Session

- Originally planned for a BOF, were told that proposal is already in-scope for L2VPN WG

    - Thursday, AM L2VPN Session dedicated to NVO3

- Propose to start work in area of network overlays

    - Industry has already produced NVGRE and VXLAN proposals

- Problem statement document

    - draft-narten-nvo3-overlay-problem-statement

- Discussion currently taking place on L2VPN WG list

Overlay Approach

- Layer a virtual network over the DCN infrastructure network

- Use an overlay or "shim" header for encapsulation

  - Overlay header carries a Virtual Network Identifier (VNID)

    – VNID identifies a specific VN instance

    – Analogous to VLAN ID, VPLS Instance, etc.

    – Needs to be "large enough" (e.g., 24 bits)

  - Also encapsulates original packet from VM as data

- Tunnel packet from source to destination

  - Encap/decap done by edge switch or hypervisor

  - VM itself unaware tunneling is taking place

IETF Work Area

- Need overlay/encapsulation header
  - Exact header details not important (but must meet requirements)
  - Multiple encapsulations not necessarily a problem
  - Existing, already defined encapsulations may suffice
- Control plane is where things get interesting
  - This is where IETF can provide value

Control Plane Tasks

- Mechanism to populate mapping tables used when encapsulating

  - Need to know where to tunnel packet to

- Mechanism for delivering multi destination frames within a VN instance

  - For implementing tenant broadcast or multicast

- Registration mechanism for endpoint to inform switch:

  - When it is attaching to a particular VN instance

  - When it is detaching from the network (and VN instance)

- Registration mechanism must include updating of stale information in switches

Questions?