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?