Virtual Network Auto-Provisioning Requirements

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Purpose

Outline the high level requirements for virtual networks automatic provisioning in NVO3.

Typical VN Provisioning Procedures

- VN requirements collection
- Deploy
  - Mapping
  - Delivering/Configuration command
  - Execution
- Running
- Reporting

Management Initiated VN Auto-Provisioning: Description

- VN requirements collection
- Deploying
  - Mapping
  - Delivering/Configuration command
    - Create VM
    - Configure VM('s vNIC)
    - Configure NVE
    - Optional, other configurations
  - Execution
- Running
- Reporting

Management Initiated VN Auto-Provisioning: Requirements

- Req-1: Standard NVA-NVE/GW management interfaces, includes interface protocol and related parameters

- Req-2: Standard NVA-Hypervisor/VM Orchestration System management interfaces, includes interface protocol and related parameters

- Req-3: Optional, automatic routing protocol configuration

- Detailed information, TBD

VM Initiated VN Auto-Provisioning: Description

- VN requirements collection
- Deploying
  - Mapping
  - Delivering/Configuration commands
    - Create VM
    - VM auto-discover NVE
    - VM auto-join NVE
    - VM auto-configuration
    - NVE auto-configuration (triggered by VM) ⟷ NVE-NVA
      - Create VRF; and/or Add New Entry; or do nothing
    - Optional, other configurations
  - Execution
- Running
- Reporting

VM-NVE Protocol, NVE-NVA supp.

VM Initiated VN Auto-Provisioning: Requirements

- Req-1: NVE auto-discovery protocol, be used to discover NVE automatically and further automatic join NVE and trigger NVE to auto-configure the related VN

- Req-2: NVE auto-discovery protocol support and efficiently deliver the related parameters, include MAC address, IP address, VN-ID, Session-ID, etc.

- Req-3: VM authentication to VN by using the existing protocols such as EAP or IEEE802.1x, etc

- Req-4: NVE supports automatic execution of create VRF command and configuration

- Req-5: Optional, automatic routing protocol configuration

- Detailed information, TBD

Conclusion

- Management Initiated(/Administrator configuration/operation simulation) VN Auto-Provisioning mechanism needs lots of standardization works.

- VM Initiated VN Auto-Provisioning mechanism by defining a new light-weighted VM-NVE protocol to show the possibility to realize VN auto-provisioning.

Next Step…

- Comments collecting and further discussions
- Detailed requirements, esp. for NVE and NVE-NVA etc.
- ……