Network Portability
Requirements and Models

draft-shima-cloud-net-portability-reqs-and-models-00

Keiichi SHIMA <keiichi@iiijlab.net>
Yuji SEKIYA <sekiya@wide.ad.jp>

2010-9-17 at Clouds Conference Call
Purpose of this I-D

- Define requirements of network portability in cases when multiple datacenters or multiple cloud* service providers are involved
- List up available operation options to satisfy the requirements
- By defining some of the standard ways for network portability, inter-cloud interoperability will be increased

*) ‘Cloud’ means virtual machine hosting environment (HaaS) in this document.
Requirements

1. Provide the same user service networks over multiple datacenters or clouds
2. Provide high availability to user networks
Requirement 1

• Provide the same user service networks over multiple datacenters or clouds

• Users/Service providers want to move their computing resources to any datacenter, or even to different cloud
Requirement 2

• Provide high availability to user networks

• Service networks should not have a single point of failure
Models

• Currently, 2 models are defined in the I-D
  1. Host-oriented portability model
  2. Network-oriented portability model
Host-oriented Portability Model

- A virtual machine being migrated from one place to another takes care of its network transparency

- e.g. Using Mobile IP, HIP, or simple routing (host route, for example)
Network-oriented Portability Model

• The infrastructure takes care of the network transparency of migrated virtual machines

• e.g. Using wide area VLAN, NEMO, PMIP, LISP, or whatever
Sample Operation 1

- Wide area VLAN in WIDE Cloud

Distance between NOCs are about 100km to 500km
Sample Operation 2

- NEMO based portability implementation
Summary

• To deploy inter-cloud service, consensus on network portability requirements and models need to be defined

• We define some of them to start the discussion based on our demand and operation experience in WIDE Cloud