



DC aware TE topology model

draft-llc-teas-dc-aware-topo-model-03

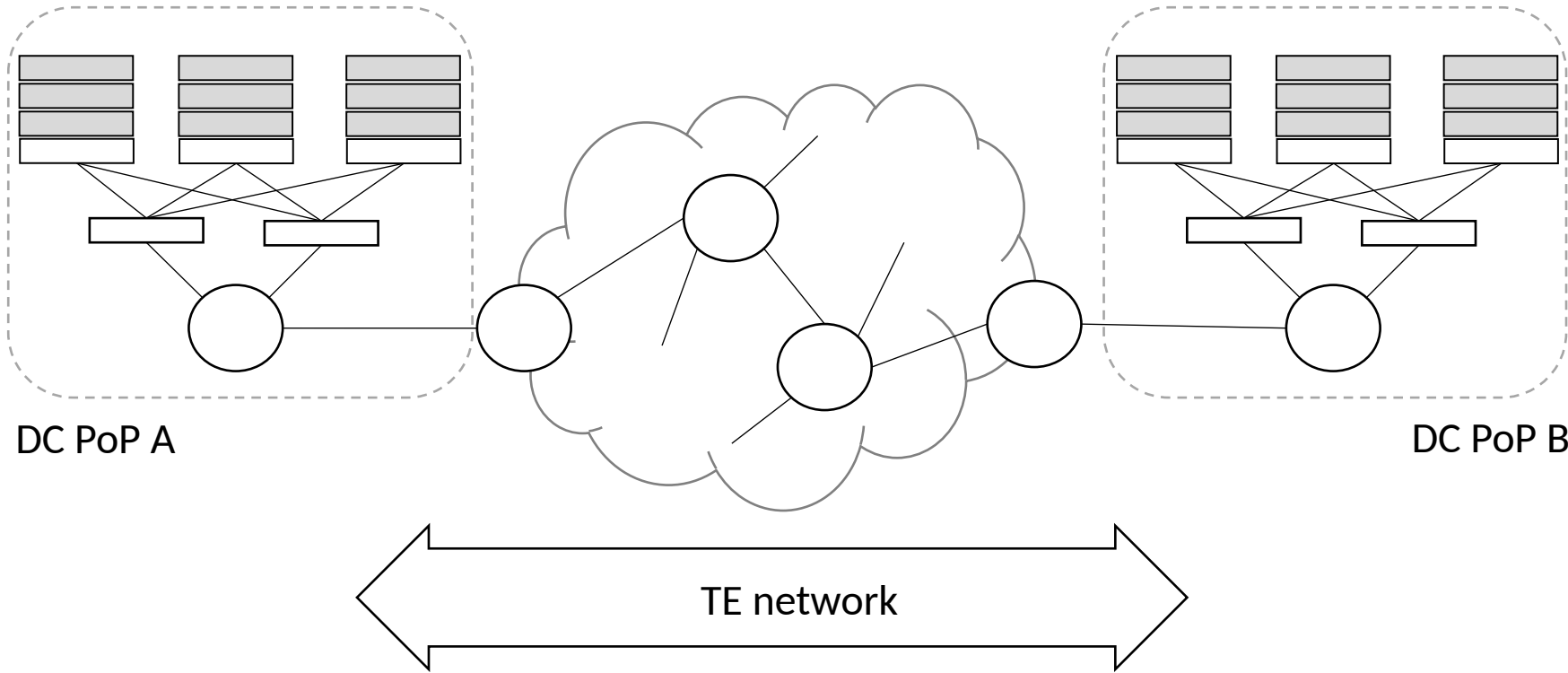
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Problem statement

- Wide deployment of computing facilities across service provider's Networks, in the form of DC PoPs
- Interesting to have **joint topological view of both networking and computing resources** available to assist on **TE decisions that could require combined awareness of network and compute domains**
- Similar approach as the one followed in *draft-ietf-teas-sf-aware-topo-model* but concentrated on available DC resources instead of functions



- DC PoPs described in terms of resource capabilities such as CPU, memory, storage, etc
- Alternatively, they could be described in terms of resource bundles (quotas, flavors)

Flavor	vCPU	RAM	Storage	Bandwidth
.tiny	1	512 MB	1 GB	1 Gbps
.small	1	2 GB	20 GB	1 Gbps
.medium	2	4 GB	40 GB	1 Gbps
.large	4	8 GB	80 GB	1 Gbps
.2xlarge	8	16 GB	160 GB	1 Gbps
.4xlarge	16	32 GB	320 GB	1 Gbps
.8xlarge	32	64 GB	640 GB	1 Gbps

Changes from -02

- Addition of compute node to the model
 - The compute node is the asset being virtualized, typically a blade server
- Improve description of DC resource information
 - Text added for referring to cloud managers (Kubernetes, OpenStack) as means for collecting compute node information
 - More elaborated text referring to the alternative of handling bundle resources (i.e. quotas) as the ones offered by cloud providers (e.g., Microsoft Azure, Amazon Web Services, Google Cloud Platform, etc)

Addition of compute node to the model

3. Model structure

```
module: ietf-dcpop-dc
  +--rw dcpop
    +--rw dc* [id]
      +--rw hypervisor* [id]
        +--rw ram
          +--rw total? uint32
          +--rw used?  uint32
          +--rw free?  uint32
        +--rw disk
          +--rw total? uint32
          +--rw used?  uint32
          +--rw free?  uint32
        +--rw vcpu
          +--rw total? uint16
          +--rw used?  uint16
          +--rw free?  uint16
        +--rw instance* -> /dcpop/dc/instance/id
        +--rw id          string
        +--rw name?      string
      +--rw instance* [id]
        +--rw flavor
          +--rw disk?   uint32
          +--rw ram?   uint32
          +--rw vcpus? uint16
          +--rw bandwidth? string
          +--rw id?    string
          +--rw name?  string
        +--rw image
```

3. Model structure

```
module: ietf-dcpop-dc
  +--rw dcpop
    +--rw dc* [id]
      +--rw comp_node* [id]
        +--rw hypervisor* [id]
          +--rw ram
            +--rw total? uint32
            +--rw used?  uint32
            +--rw free?  uint32
          +--rw disk
            +--rw total? uint32
            +--rw used?  uint32
            +--rw free?  uint32
          +--rw vcpu
            +--rw total? uint16
            +--rw used?  uint16
            +--rw free?  uint16
          +--rw instance* -> /dcpop/dc/comp_node/instance/id
          +--rw id          string
          +--rw name?      string
        +--rw instance* [id]
          +--rw flavor
            +--rw disk?   uint32
            +--rw ram?   uint32
            +--rw vcpus? uint16
            +--rw bandwidth? string
            +--rw id?    string
            +--rw name?  string
          +--rw image
```



```
      +--rw ip-address? inet:ip-address
      +--rw project?   string
      +--rw status?    enumeration
      +--rw id          string
      +--rw name?      string
      +--rw project?   string
      +--rw status?    enumeration
      +--rw id          string
      +--rw name?      string
      +--rw dcpop-ref? -> /dcpop/dcpop-id
    +--rw ap*          -> /actn-vn:actn/ap
```

```
/access-point-list/access-point-id
```



```
      +--rw name?      string
      +--rw id          string
      +--rw ip-address? inet:ip-address
```



Summary

- Version -00 presented at IETF 109
- Version -02 presented at IETF 114
- As next steps:
 - Assess the validity of the YANG model
 - Prepared new version with the feedback received from that assessment and from the session today
- Any feedback / comment is more than welcome