

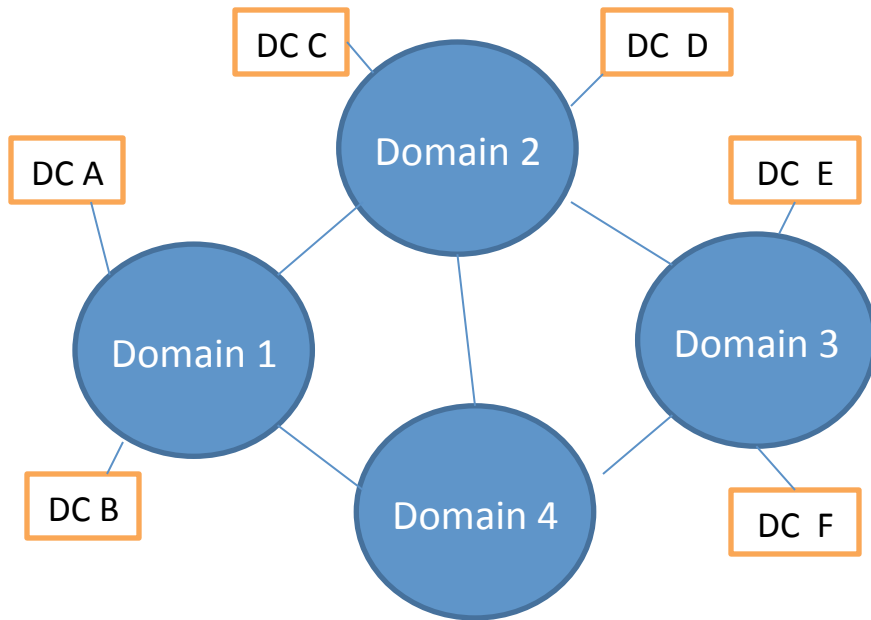
ACTN Use Case for Multi Domain Data Center Transport Interconnect

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Global Data Center Interconnect

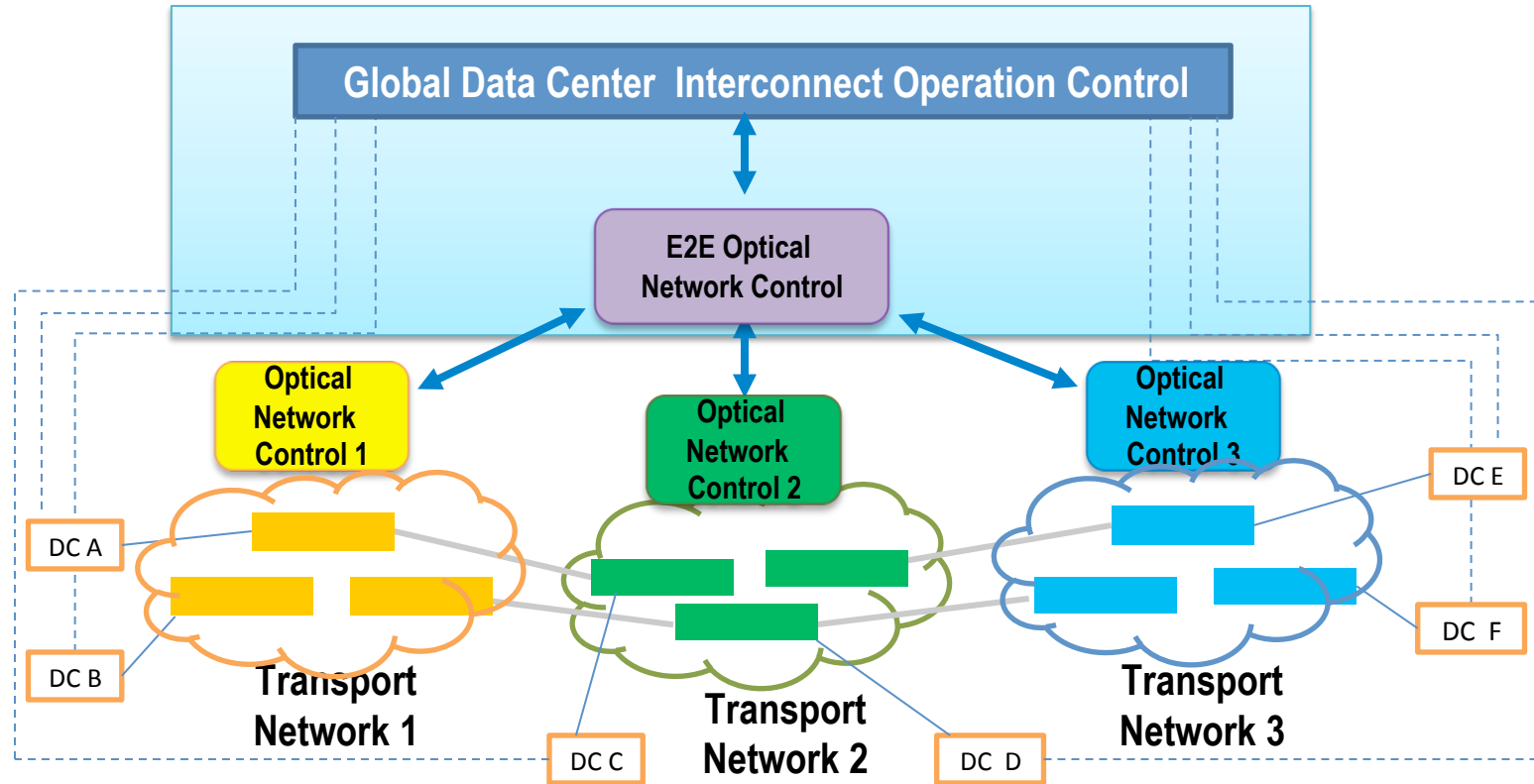


1. Data Centers are geographically spread and homed on primarily internal transport network domains or on trusted external provider domains.
2. There may be organizational boundaries within internal domains.
3. Many applications require dynamic and elastic connectivity across multi-domain networks.
4. Each domain may employ different vendor equipment and/or heterogeneous control/management technology for its domain operation (e.g., control plane, NMS-based, SDN control, etc.)

Multi-domain DCI Applications

- VM Migration
- Global Load Balancing
- Real-time Disaster Recovery
- On-demand Virtual Connection/Circuit Services

Global DCI Operation/Control View



- Need a hierarchical operation/control of optical transport network
- Building on top of existing network control technologies/domains to be able to E2E network control to help global DCI transport operation/control
- Need standard-based abstraction/APIs and protocols for E2E network control and global DCI operation control.

Requirements

- The interfaces between the Data Center Operation and each transport network domain SHOULD support standards-based abstraction with a common information/data model.
- Network Query (Pull Model) capability from the Data Center Operation to each transport network domain to collect potential resource availability (e.g., BW availability, latency range, etc.) between a few data center locations and the negotiation capability on the abstraction level.
- Network Path Computation Request from the Data Center Operation to each transport network domain to estimate the path availability.

Requirements (Cont.)

- Network Virtual Connections/Circuits Request from the Data Center Operation to each transport domain to establish an end-to-end virtual connections/circuits.
- Network Virtual Connections/Circuits Modification Request from the Data Center Operation to each transport domain to change QoS/SLA, protection schemes of the existing connections/circuits.
- Network Abnormality Report (Push Model) from each transport domain to the Data Center Operation indicating the service impacting network conditions or the potential degradation indications of the existing virtual connections/circuits.

Summary/Next Steps

- Refine the requirements
 - Security requirements need to be added.
- Comments are always welcome.

Thanks You!