

Cloud/Data Center Operations and Management Discussion

IETF-81 OPSAWG

09:00-11:30 Morning Session I, Rm. 202

Quebec City Convention Centre

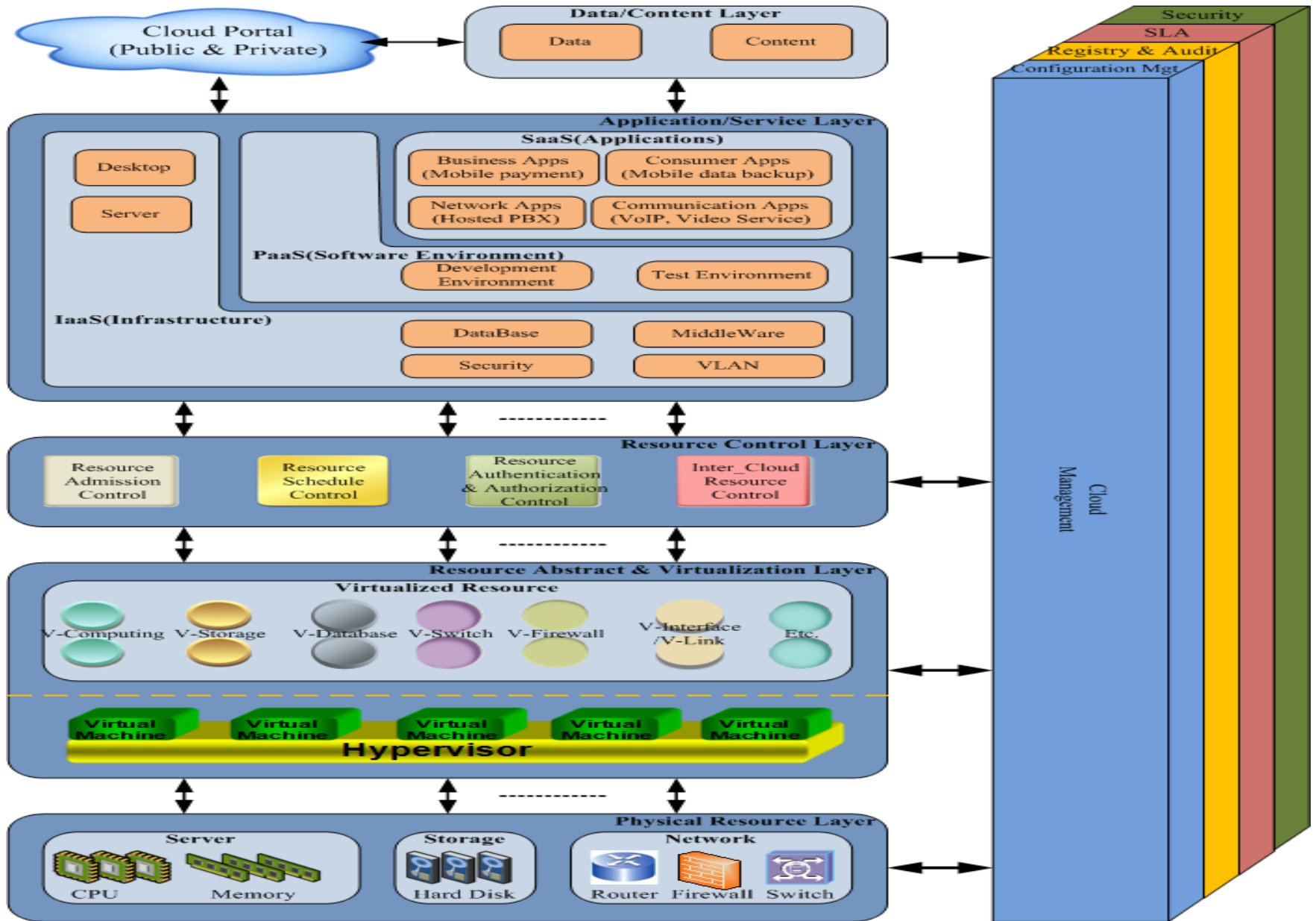
900 Blvd. René-Lévesque Est.
Quebec, QC G1R 2B5, Canada

Wednesday, July 27, 2011

Outline

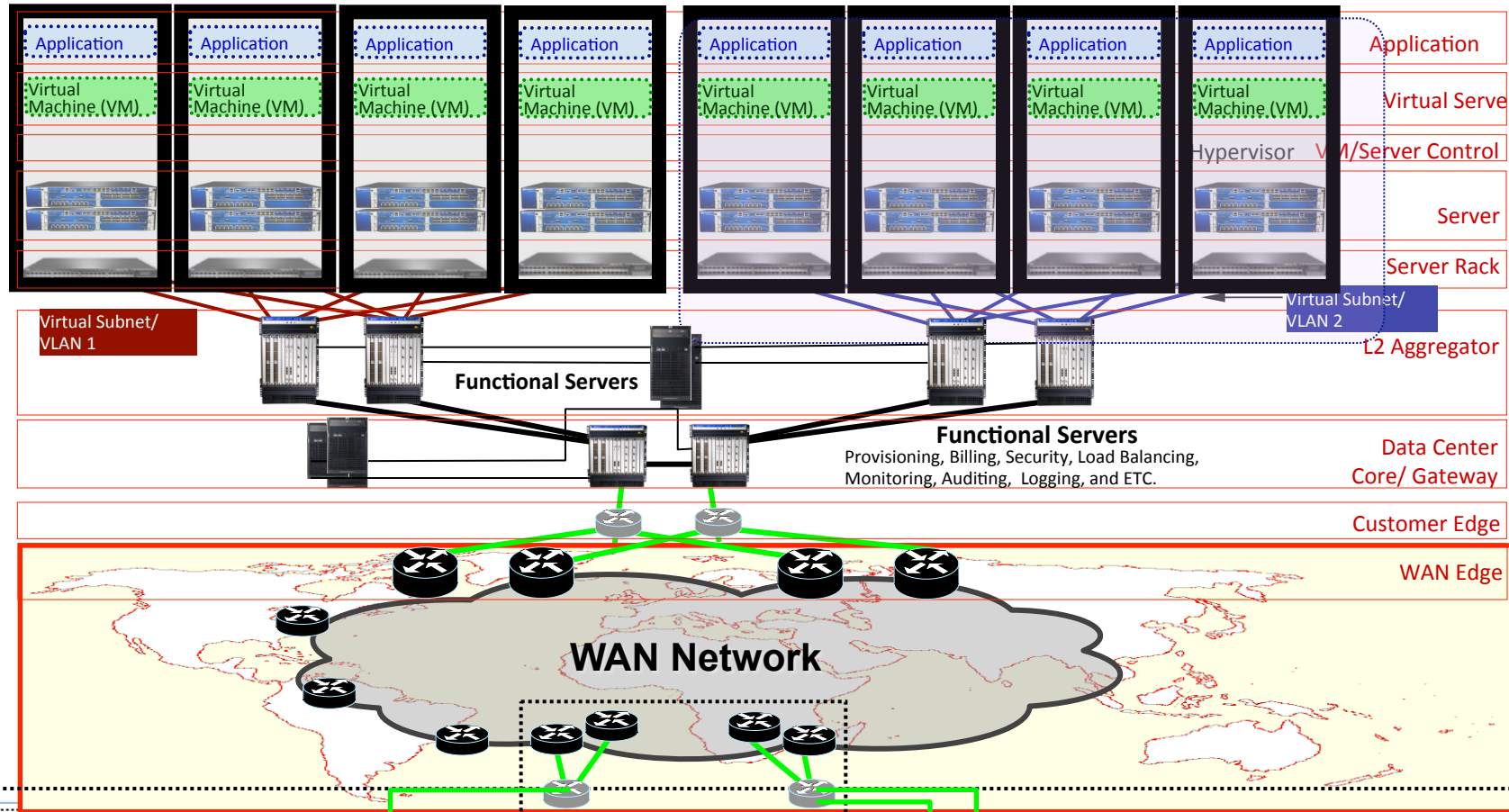
- **Cloud infrastructure overview**
- **Cloud draft categories**
- **Draft details**
- **Draft mapping to the Cloud framework**
- **Discussion and Next Steps**

Cloud Reference Framework

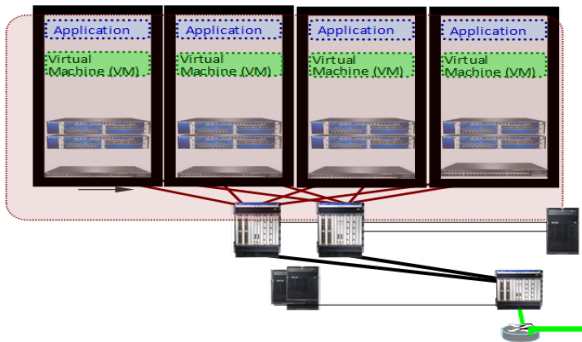


Generic Data Center and Network Drawing

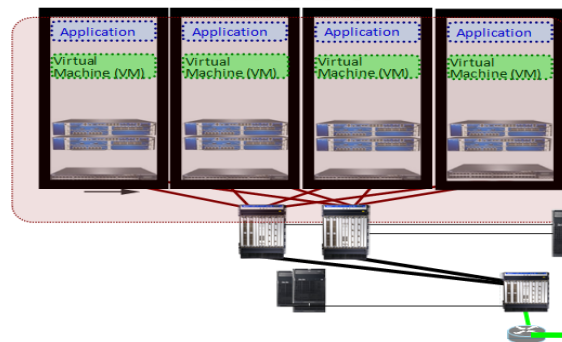
Data Center A



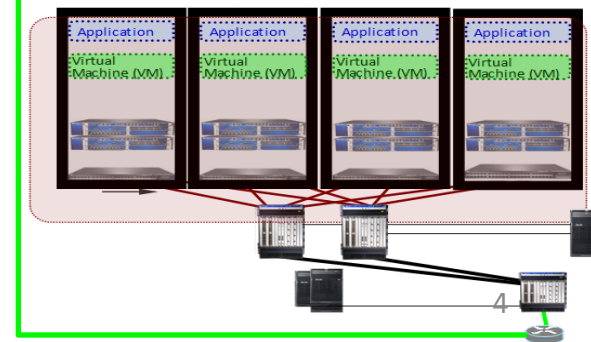
Data Center B



Data Center C



Data Center D



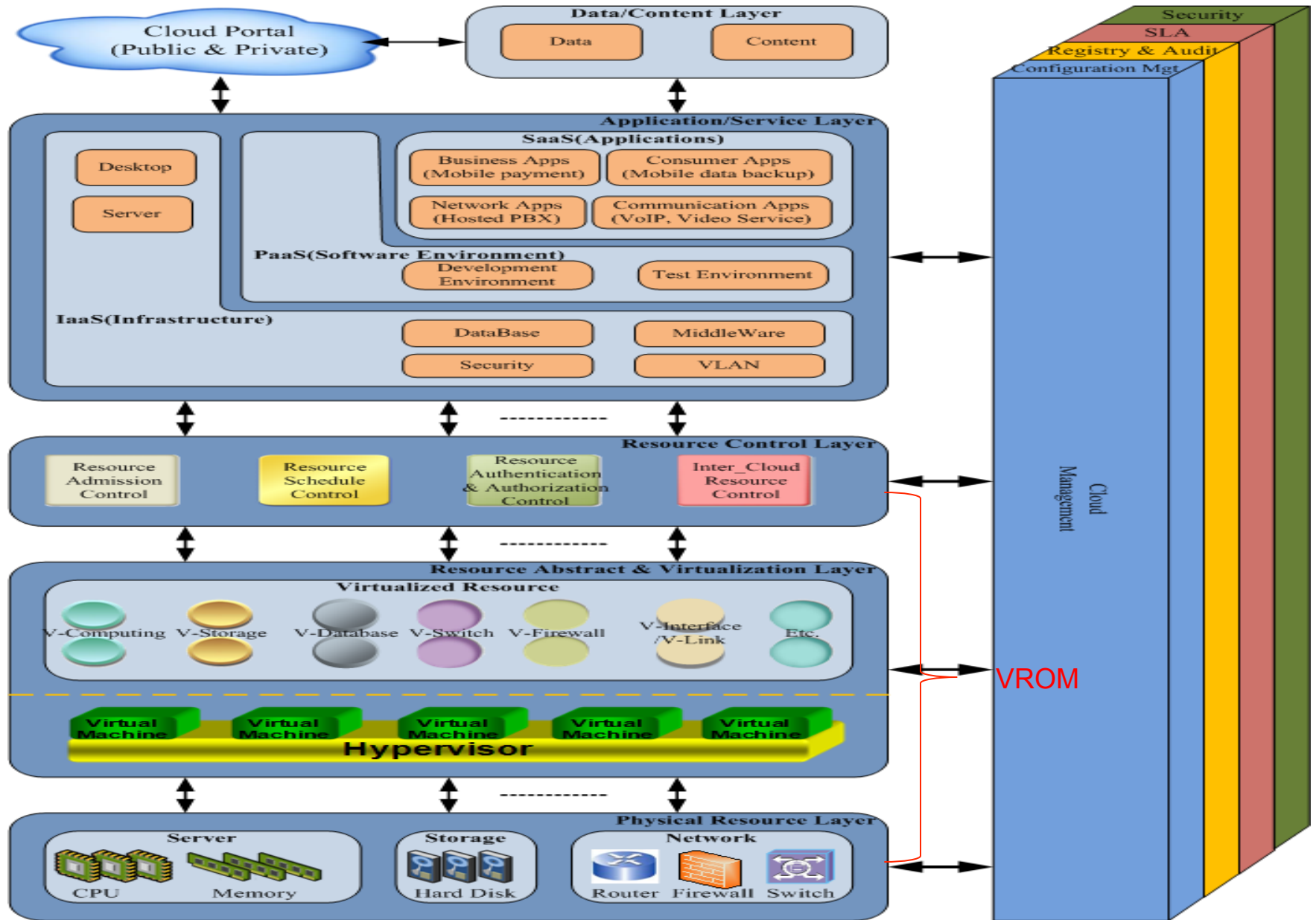
Categories for Active Cloud Drafts

- 16 active cloud drafts in OPSAWG falling into 9 categories
 - Virtual Resource Operations and Management (3 drafts)
 - Cloud Service State Migration (3)
 - DC Network Mobility (2)
 - DC Resources Discovery and Brokering (2)
 - Cloud Work Survey for SDO Coordination (2)
 - Data Center (DC) Reporting and Diagnostics (1)
 - VPN for DC (VPN4DC) (1)
 - Cloud Reference Framework (1)
 - Cloud Security (1)

Virtual Resource Operations and Management

- The mechanism to virtualize physical DC resources (CPU, memory, disk space, bandwidth, and etc.), and to manage the virtualized resources
 - Virtual Resource Operations & Management in the Data Center (<http://tools.ietf.org/html/draft-tsou-vrom-problem-statement-02>)
 - Virtual Network Management Information Model (<http://tools.ietf.org/id/draft-okita-ops-vnetmodel-04.txt>)
 - Virtual Resource Management in Cloud (<http://www.ietf.org/id/draft-junsheng-opsawg-virtual-resource-management-00.txt>)

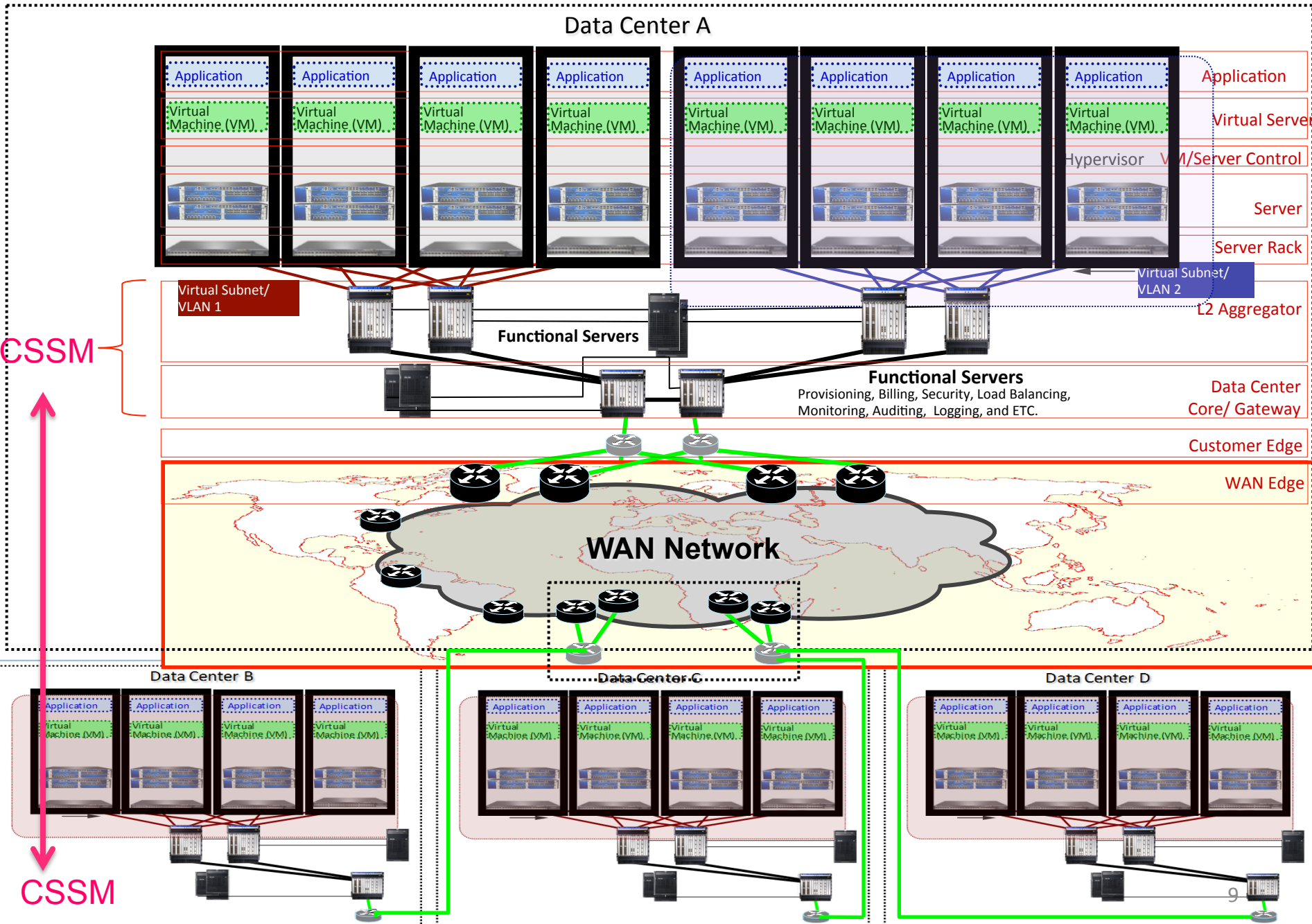
Virtual Resource Operations and Management



Cloud Service State Migration

- The mechanism to migrate the states related to cloud services between DCs.
 - Survey and Gap Analysis for Policies and Dynamic Information Migration in Data Center (<http://www.ietf.org/id/draft-wang-opsawg-policies-migration-gap-analysis-00.txt>)
 - Policies and dynamic information migration in DCs: Solution Survey (<http://www.ietf.org/id/draft-gu-opsawg-policies-migration-solution-survey-00.txt>)
 - Policies and dynamic information migration in DCs (<http://www.ietf.org/id/draft-gu-opsawg-policies-migration-00.txt>)

Cloud Service State Migration



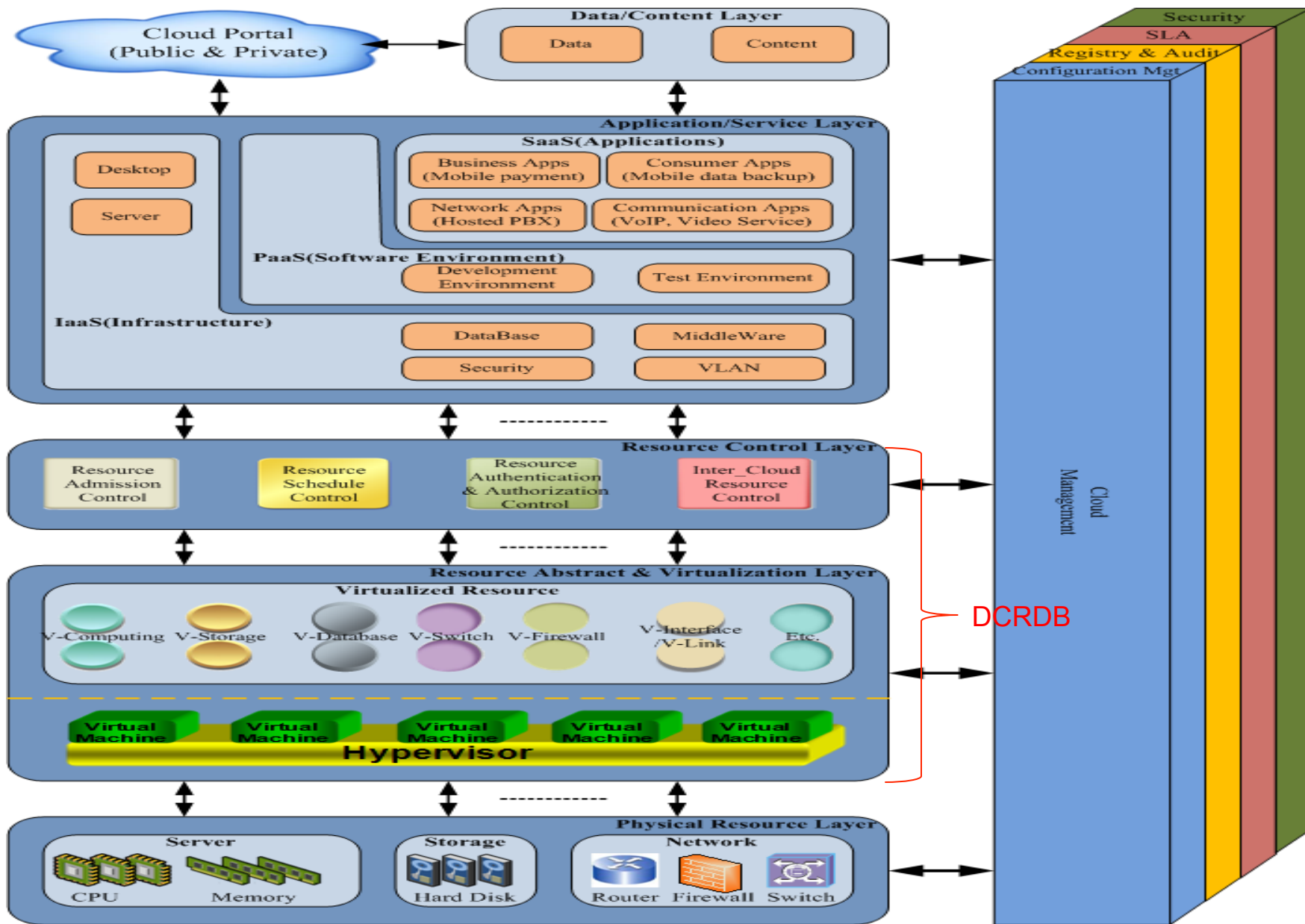
DC Network Mobility

- The mechanism to migrate VMs and virtualized network resources between Virtual Subnets and/or DCs
 - Managing Service Mobility for Virtualized Networks (
<http://www.ietf.org/id/draft-yokota-opsawg-virtnw-service-management-01.txt>)
 - Network Portability Requirements and Models for Cloud Environment (
<http://tools.ietf.org/id/draft-shima-cloud-net-portability-reqs-and-models-00.txt>)

DC Resources Discovery and Brokering

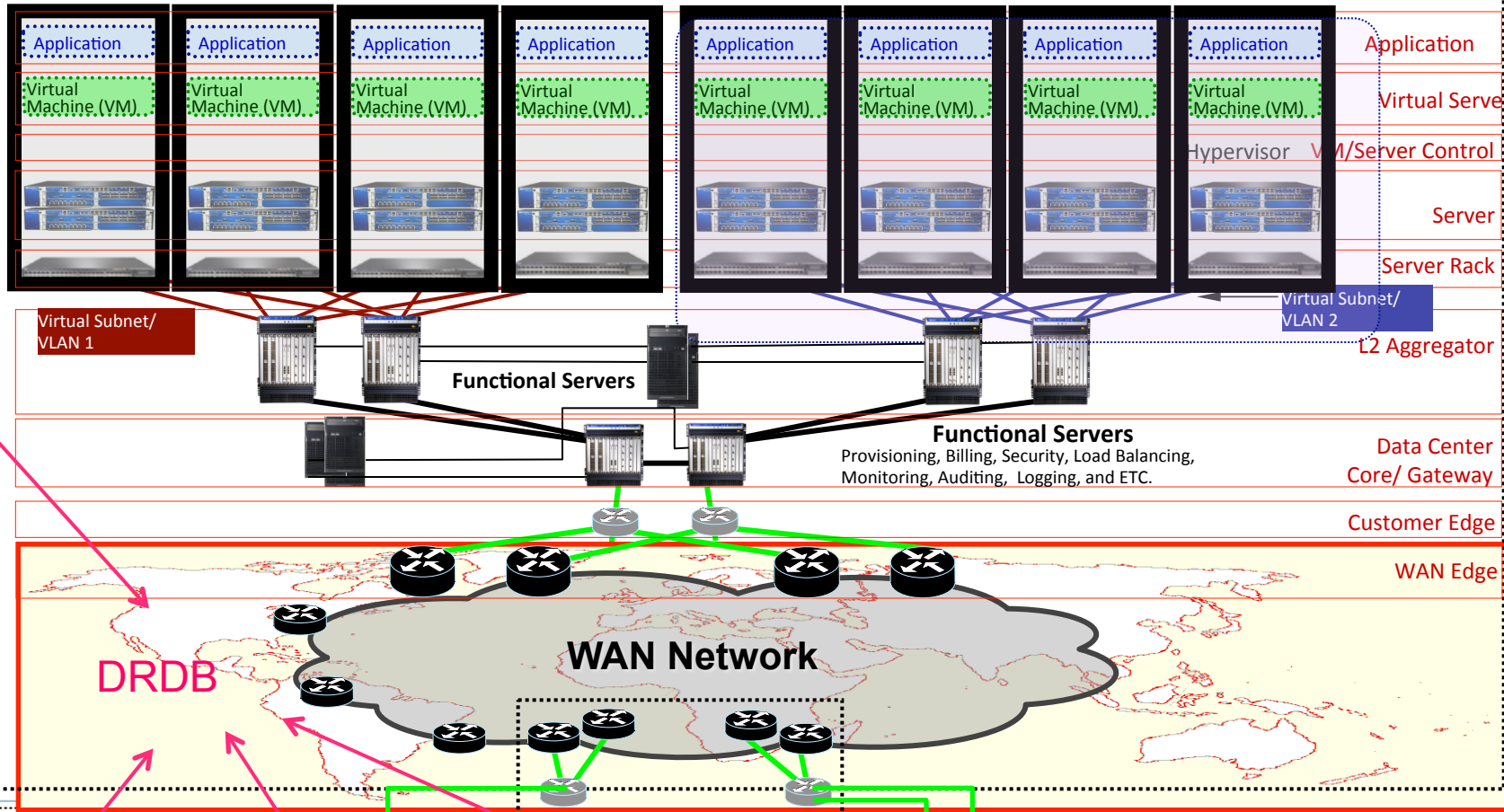
- The mechanism to obtain cloud services related information, and use the aggregated information from multiple service providers to deliver differentiated services
 - Problem Statement for Setting Up Dynamic Virtual Network (<http://tools.ietf.org/id/draft-ko-dvn-problem-statement-00.txt>)
 - Cloud Service Broker (<http://www.ietf.org/id/draft-shao-opsawg-cloud-service-broker-00.txt>)

Data Center Resource Discovery and Brokering

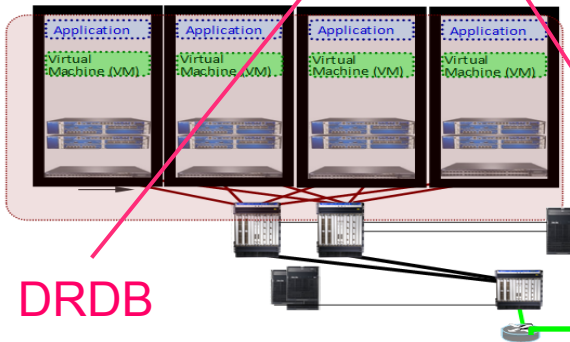


Data Center Network Migration

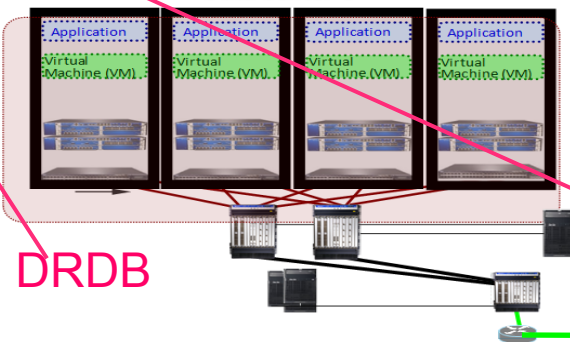
Data Center A



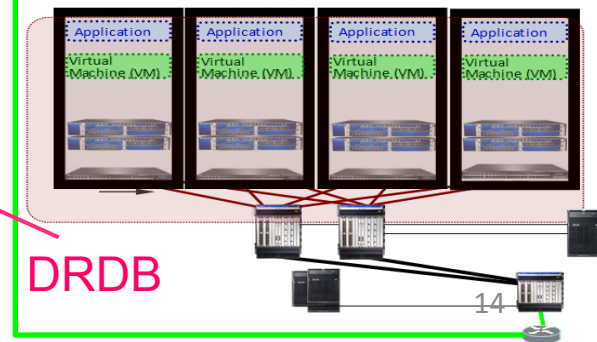
Data Center B



Data Center C



Data Center D



Cloud Work Survey for SDO Coordination

- Surveys of Cloud Standard Organizations and Work Items to be used by IETF for standard development coordination work
 - Cloud SDO Activities Survey and Analysis (<http://www.ietf.org/id/draft-khasnabish-cloud-sdo-survey-01.txt>)
 - Cloud Industry Workitem Survey Results (<http://www.ietf.org/id/draft-khasnabish-cloud-industry-workitems-survey-01.txt>)

Data Center (DC) Reporting and Diagnostics

- Cloud service monitoring, reporting, and trouble shooting in DCs
 - Syslog Extension for Cloud Using Syslog Structured Data (<http://www.ietf.org/id/draft-golovinsky-cloud-services-log-format-00.txt>)

VPN for DC (VPN4DC)

- Extending VPN into DCs to provide resource separation, VM mobility restriction, service provisioning control and end-to-end management capabilities for L2/L3VPN customers.
 - Requirement and Framework for VPN-Oriented Data Center Services (<http://tools.ietf.org/id/draft-so-vdcs-00.txt>)

Cloud Reference Framework

- Reference framework for organizing the Cloud infrastructure to demonstrate various cloud components and how they fit together in delivering an end-to-end service
 - Cloud Reference Framework (<http://www.ietf.org/id/draft-khasnabish-cloud-reference-framework-01.txt>)

Cloud Security

- The requirements, framework, best practices, and solutions to ensure security of cloud infrastructure and services.
 - Security Framework for Virtualized Data Center Services (
<http://www.ietf.org/id/draft-karavettil-vdcs-security-framework-00.txt>)

Interaction with Other SDOs

- Others SDOs that depends on IETF protocol development and/or interworking
 - ATIS CSF (<http://www.atis.org/Cloud/index.asp>)
 - ITU-T (<http://www.itu.int/en/ITU-T/focusgroups/cloud/Pages/default.aspx>)
 - NIST (<http://www.nist.gov/itl/cloud/use-cases.cfm>)
 - IEEE (Profile, <http://grouper.ieee.org/groups/2301/>)
 - Interop, (<http://grouper.ieee.org/groups/2302/>)
 - MEF (<http://metroethernetforum.org/index.php>)
 - TMF (<http://www.tmforum.org/browse.aspx>)