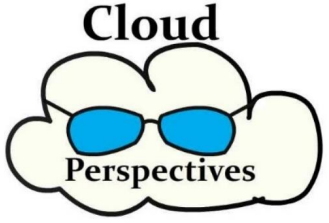
OpenStack Data Jurisdiction Compliance in Hybrid Clouds



https://etherpad.openstack.org/p/hybrid-geo

Steven Woodward, CEO, Cloud Perspectives
CCSK, CSQA, CFPS

Agenda

- Introductions
- Objectives
- Hybrid and Federation
- Data Jurisdictions
- New Cloud Perspectives
- OpenStack Fit and inTOS lessons
- Summary Perspectives Potential Actions

Steven Woodward Industry and International Participation

ISO SC38 (Cloud Computing) SC7 (Systems)
NIST Cloud Contributor and Co-Lead
IEEE – Contributor
Cloud Security Alliance
OMG – Cloud Standards Customer Council

IFPUG Chair Industry Standards Committee
ITU-T (United Nations) Cloud Contributor
OWASP – presenter/ collaborator
TM Forum, Quest Forum
OpenStack, itSMF, ICEAA, IIBA, ISACA

Consumer/ Customer

Providers/ Partners

Fostering Collaboration

Contributing vision and strategy to IntOS OpenStack powered enterprise cloud development

About IntOS

IntOS is a self-maintained enterprise grade OpenStack distribution, developed and supported by ComputingStack (see www.computingstack.com).

IntOS is highly resilient, agile, scalable, efficient and secure by design, while providing a simplified user experience to architect and efficiently deploy complex OpenStack solutions.

Major services include: Compute, Software Defined Storage, SDN, Container/Kubernetes as a service (by Magnum).

IntOS provides key governance capabilities by design, while incrementally incorporating Cloud 2.0 services for NFV, Edge, IoT and AI.

Based in Ottawa On Canada, ComputingStack also supports Academia and Research communities by offering cloud out of box, operation and support.

Objectives

Present hybrid-cloud and geo-jurisdiction international considerations

Interactive exchange of information and perspectives

Awareness of cloud federation activities

Identify OpenStack and InTOS components impacted and lessons

Filling gaps and integration

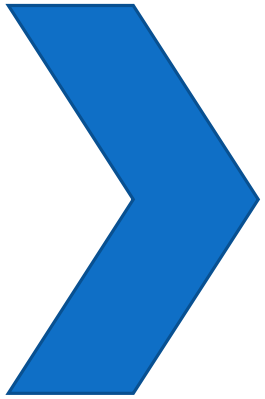
Identify future activities for OpenStack consideration

Hybrid Cloud

Public Cloud

Private Cloud

Community Cloud

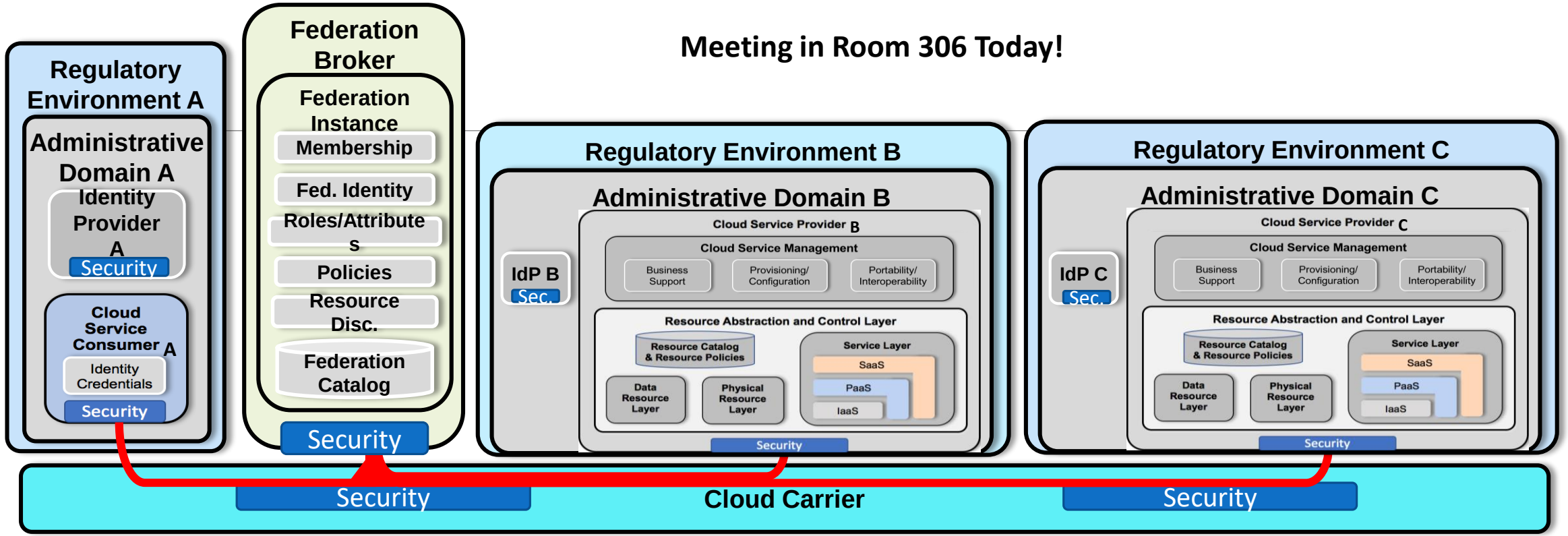


Hybrid

Binds together enabling:
Interoperability
Data Portability
Application Portability

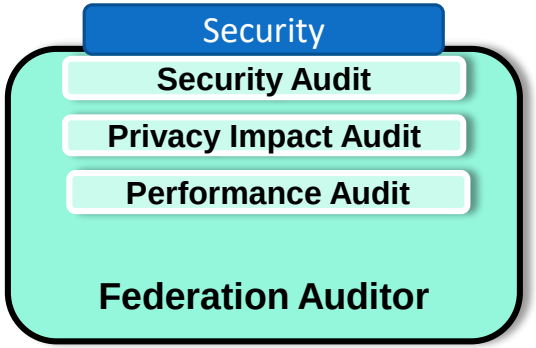
Automation

Draft Cloud Federation RA Concept - NIST IEEE P2302



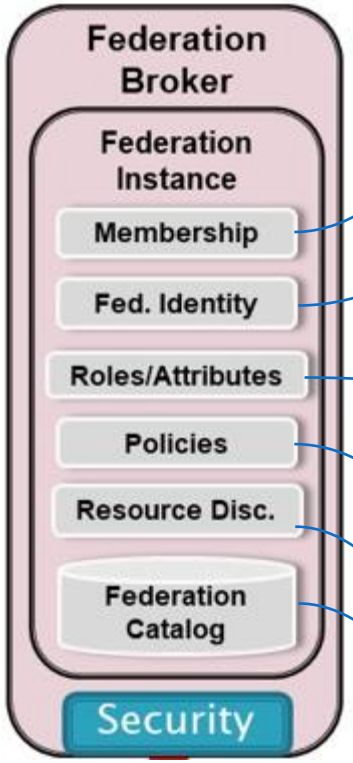
Security:

- Identity/Authentication
- Authorization/Policy
- Integrity
- Privacy
- Non-repudiation



Mapping Concept Model thru Open Source to Implementation

NIST/IEEE | openstack | intos



Domain, Project, User, Role, Policy	IntOS UI/CLI: Domain, Project, User, Role, Policy
Enabling Configuring OpenID, SAML, OAuth	IntOS configuration IntOS Keystone Enablement IDP integration: AD, LDAP
Role->rule->policy	IntOS finely granulated Role Definition and tools
Service Policy (keystone, neutron, glance, cinder, magnum, nova) Horizon policy	IntOS Development Templates and console to ease the complexity
API (resource) to policy mapping	API role and Service packaging

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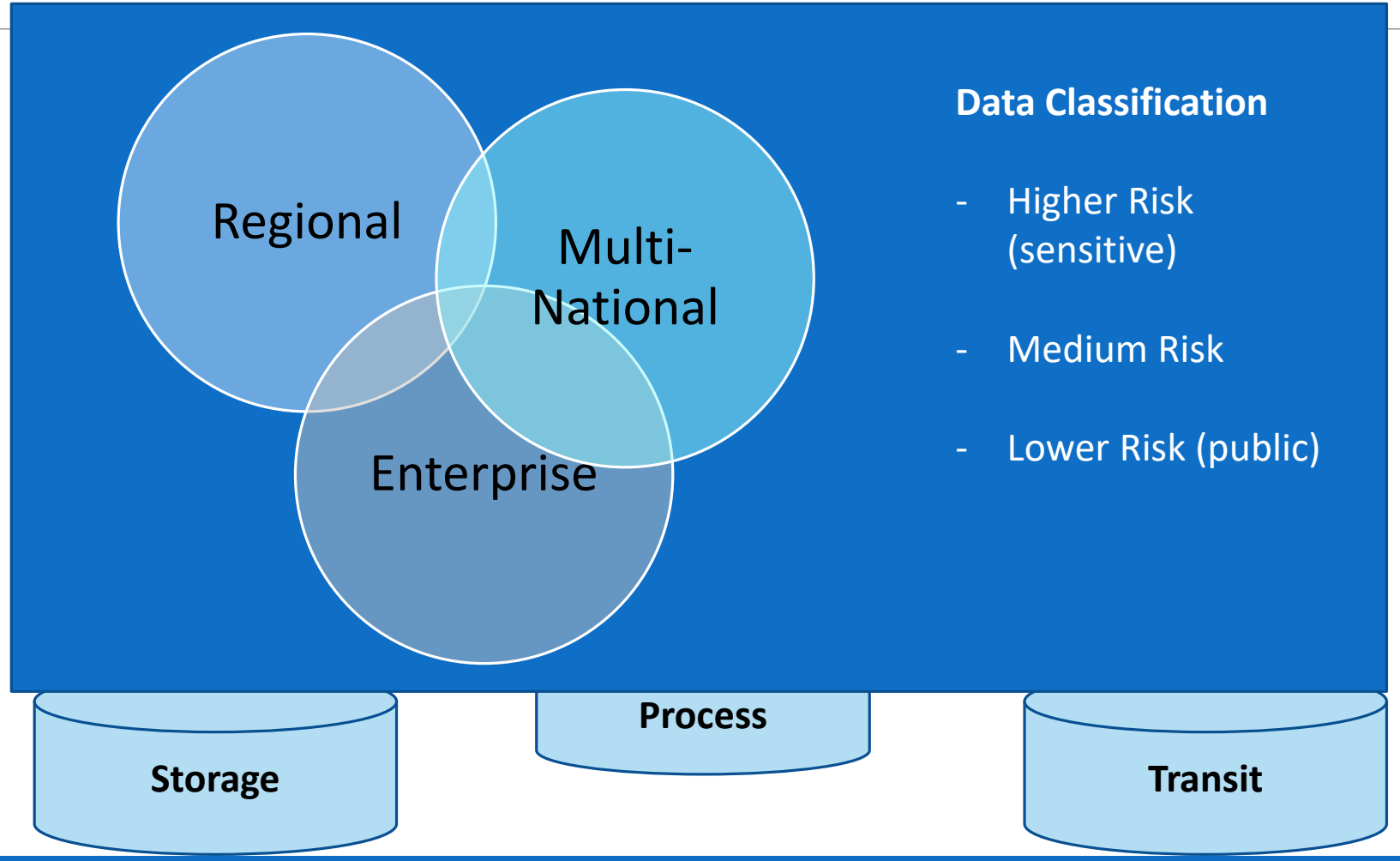
GDPR

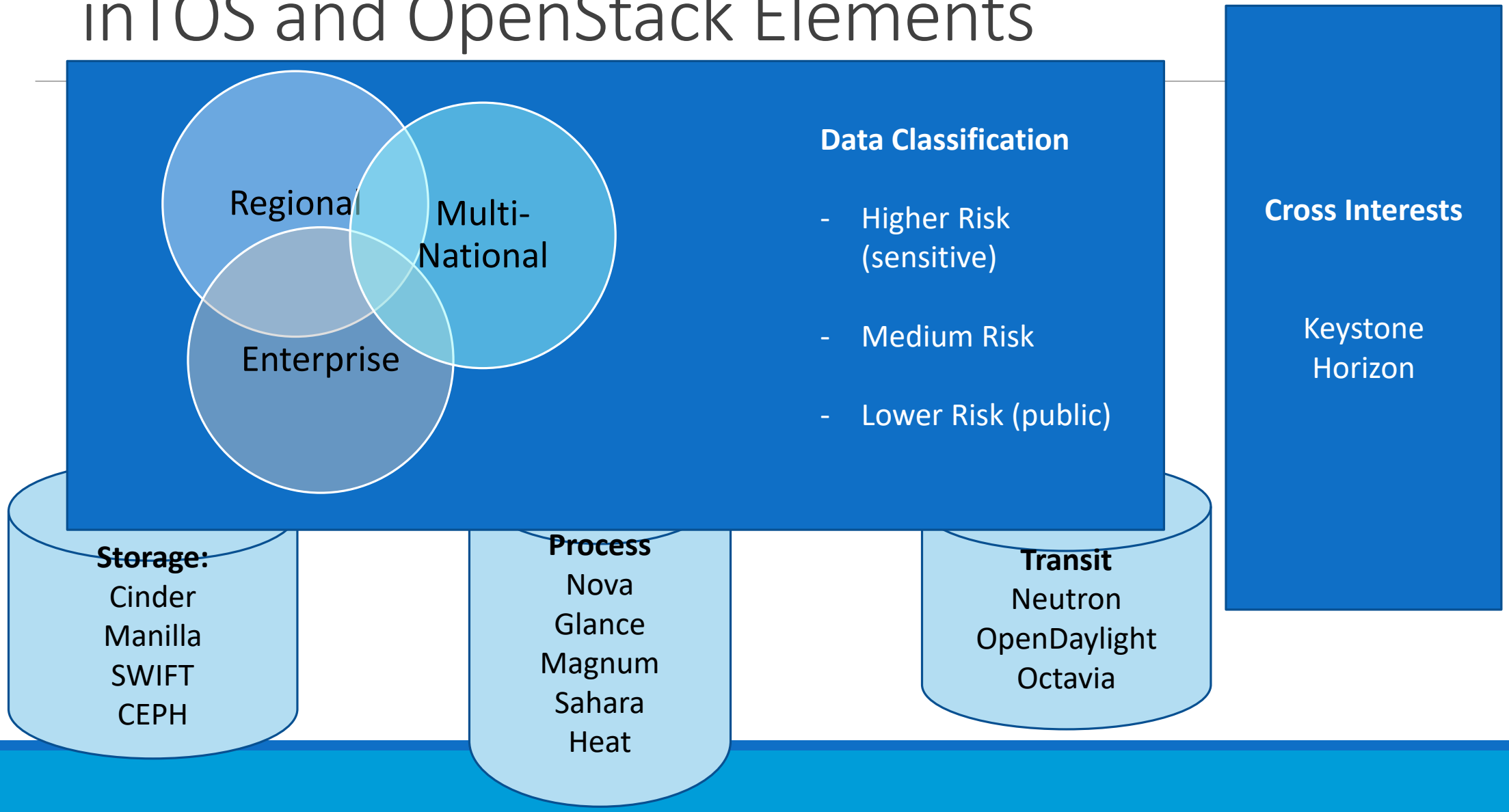
Geo-Jurisdictions

Valid Reasons to Care or Not?

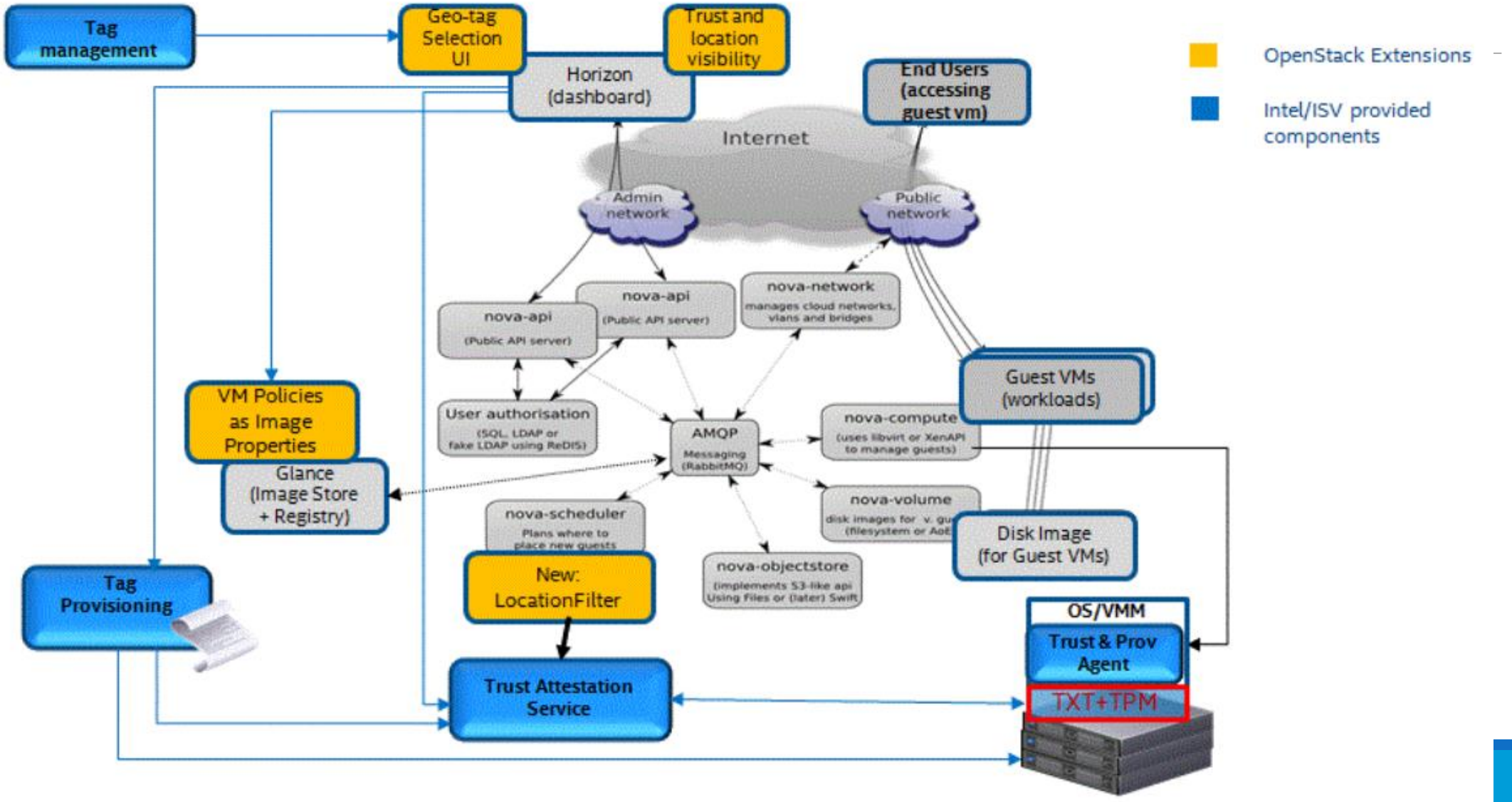
Geo-Jurisdictions ISO SC38 Concept Model



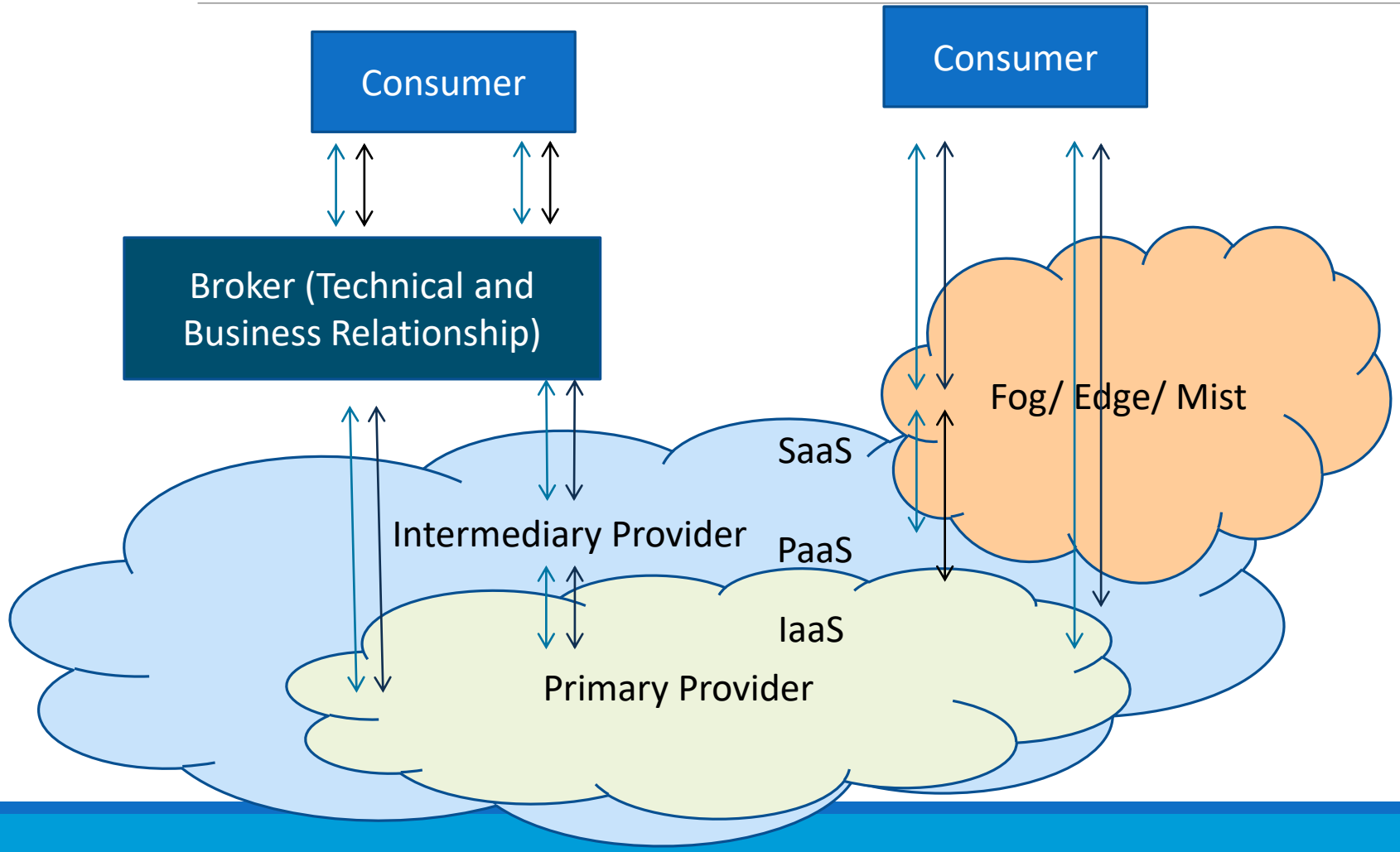
Geo-Jurisdictions Concept Incorporating inTOS and OpenStack Elements



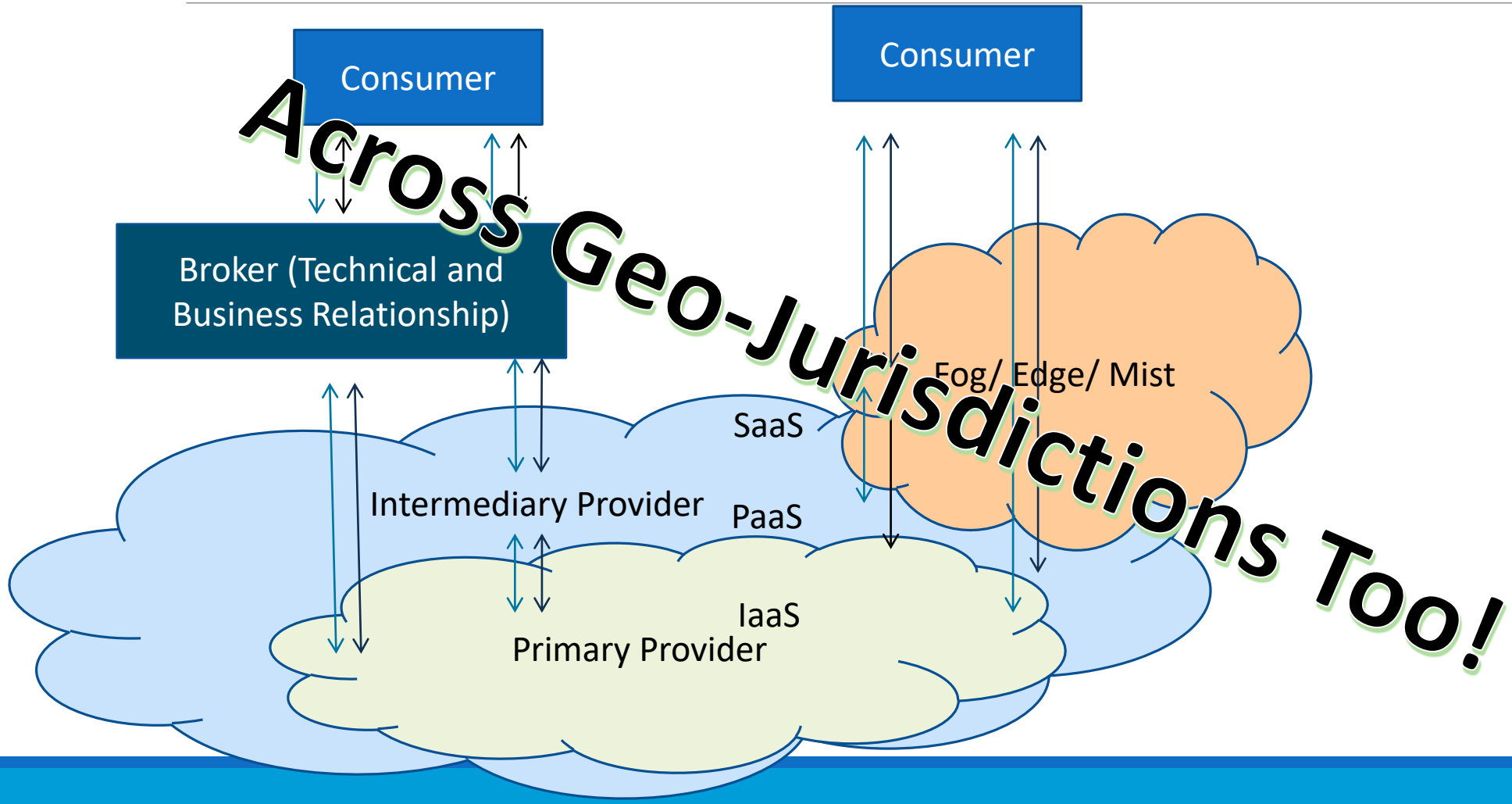
OpenStack Trusted Location Control



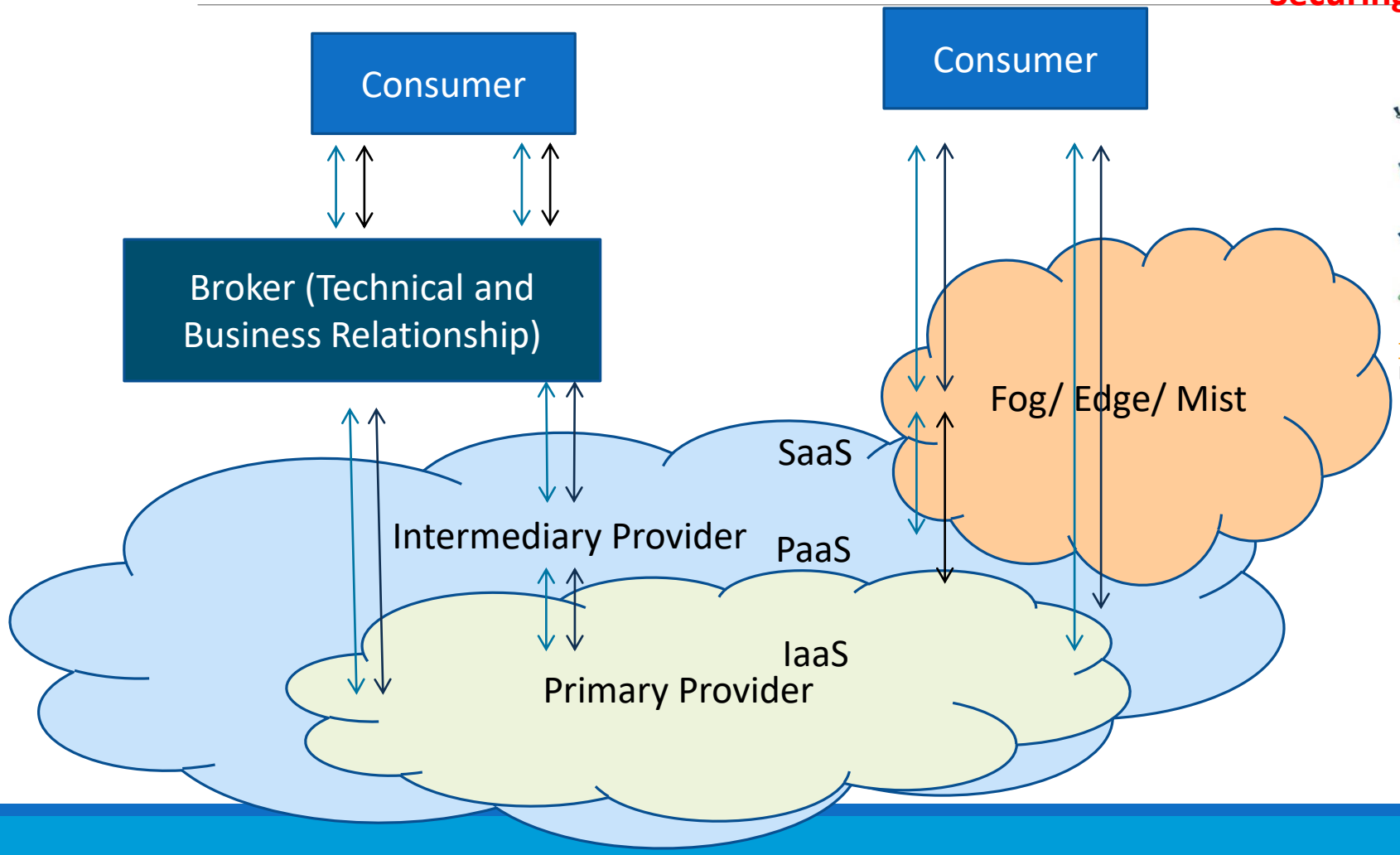
Updated Perspectives



Updated Perspectives



Compliance and Controls Sets Vary!



Securing IoT Devices Often at the Edge

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Also Integration of Non OpenStack Services

Eco-system includes a variety of products and services across service and deployment models:

Standards (ISO, IEC, IEEE, ETSI, ITU-T, NIST)

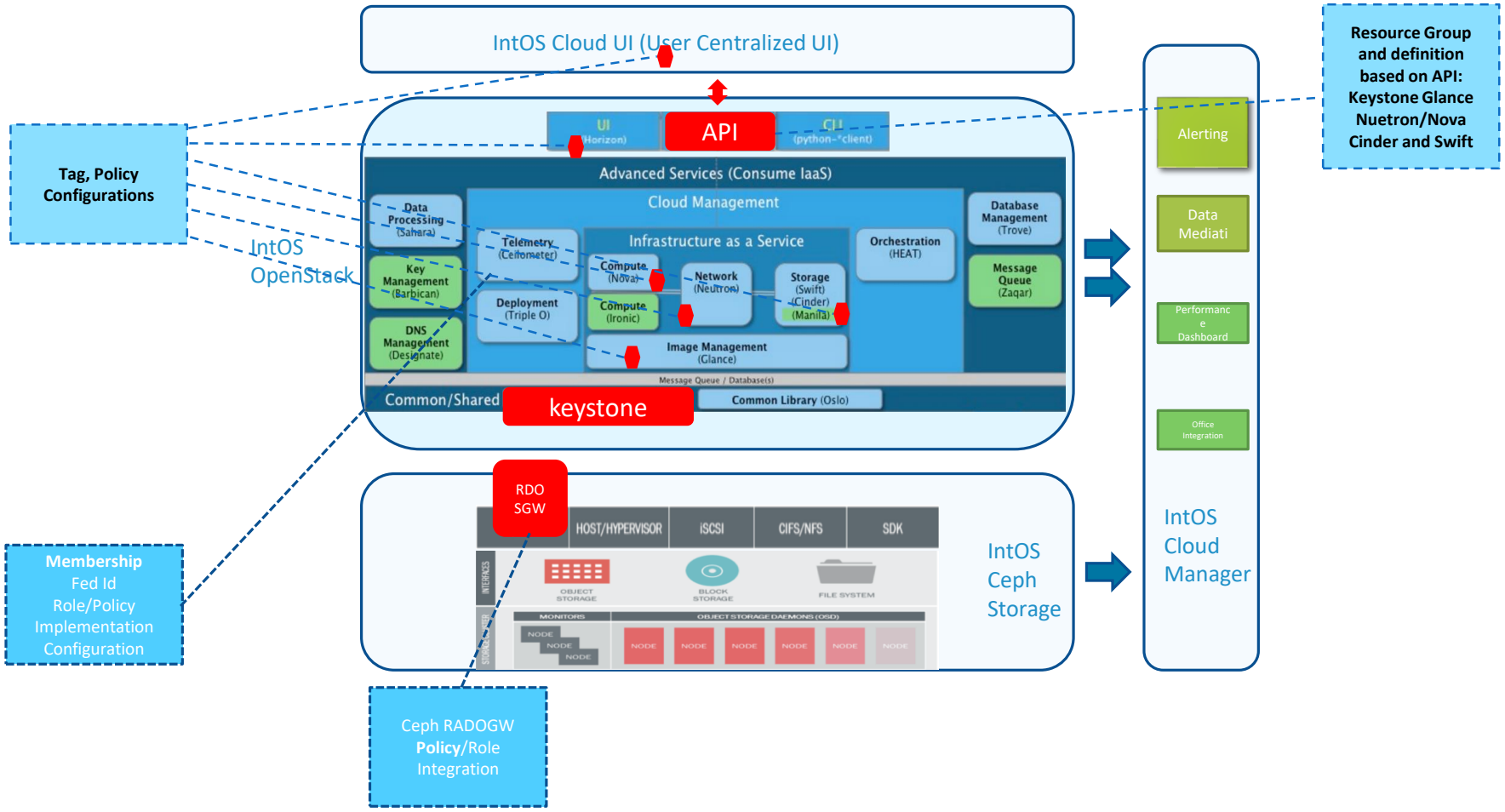
Open Groups (Open Grid Forum, The Open Group, ONFV, OSF, Open GeoSpatial Consortium, ORCA)

Communities (TM Forum, DMTF, ENISA, OMG, ISACA, CSA, CENGN)

Proprietary (Based on OpenStack and Not)

Research and Participate

IntOS Benefits from Mapping of OpenStack Elements Impacted



Lessons learned IntOS compliance

Reference Architecture and Enterprise Architecture models help (common understanding)

GPDR has driven geo-jurisdiction and portability discussions to the front of the line

OpenStack has a variety of tools and techniques supporting geo-jurisdiction and hybrid cloud deployment and governance that can be extended

Keystone Identity & Policy Management at the centre

Not magic – Complex Challenges – Is Executable

- Objectives and targeted outcomes vary
- Planning and architecting required
- Focus on your priority use cases
- Create and refine your own checklists, while embracing automation
- Trial and demonstrate capabilities (incremental progress)

Capability – Action Request

Element	Hybrid – Interoperability – Federation – Scenario/ Increment 1	Geo-Jurisdictions – Scenario/ Increment 1	Edge – Scenario/ Increment 1
Keystone - Identity			
Glance - Images			
Nova - Scheduler			
Ceph – Storage			
OpenDayLight			

Functionally Mature?

Performance?

Security?

Automation?

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Let yourself in with Digital Key

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1. Check in and choose your room
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Check in >

Well That's Interesting!

.....

It must be secure...right?

https://etherpad.openstack.org/p/hybrid-geo

Thank you!

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@cloudsimplify

Cloud Perspectives