

Deployment  
Placement  
Instrumentation  
Metering  
SLA

Events  
Logs

**Management**

Naming/DNS  
Discovery  
Trust/Certificates

Presence  
Identity  
Geospatial

**Endpoints**

HTTP, XMPP, P2P, UDT Transport  
REST, XML Invocation  
XML Schema, SOAP Description  
Resource Descriptions, RDF/OWL

Security  
Policy  
Entitlement  
Audit

Remote Desktop  
Spice, RDP

Transactions  
Synchronization  
Orchestration

**Communication**

Server profiles  
VM Management

VM Format  
VM Mobility  
VM Management

Drives  
Filesystem

**Physical  
Metaphor**

Users  
Identity

Directory  
Search

Blob Storage  
Block Storage  
Map/Table Model  
Query Model  
Content Addressable

Streaming Audio  
Streaming Video

Load Balancer  
Distributed Memory  
Grid / MPI

Content (URL, Cache)  
Message (Queue, Email)

**Platform  
Metaphor**

Intel VT, AMD-V  
VNTag

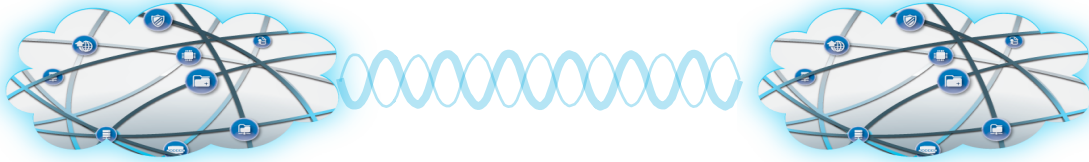
MAC Addresses  
IP Addressing  
VLAN  
Multicast

Time Synchronization  
Power Management

WWN  
FC  
iSCSI  
VSAN

**Actual Physical**

# Dynamic Workload Migration – Simple VM Mobility



**Cloud 1 / Cloud 2 transport**  
→ **XMPP**

**Cloud 1 finds Cloud 2**  
→ **Naming, Presence**

**Cloud 1 trusts Cloud 2**  
→ **Certificates, Trust**

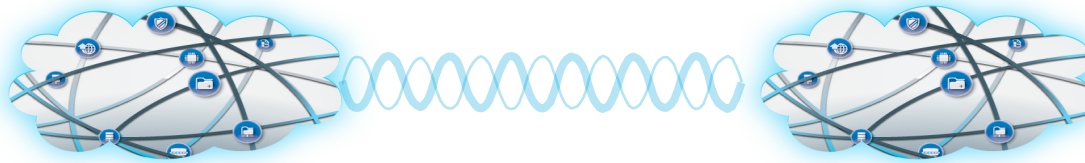
**Cloud 1/2 negotiate**  
→ **Policy, Entitlement, Security, Metering**

**Cloud 1 sets up Cloud 2**  
→ **Placement, Deployment, Format, Motion**

**Cloud 1 sends to Cloud 2**  
→ **Transfer, Management**

**VM Runs in Cloud 2**  
→ **Addressing, VLAN, WWN, Filesystem**

# Dynamic Workload Federation – Generalized Service Access



**Cloud 1 / Cloud 2 transport**  
→ **XMPP**

**Cloud 1 finds Cloud 2**  
→ **Naming, Presence**

**Cloud 1 trusts Cloud 2**  
→ **Certificates, Trust**

**Cloud 1 queries Cloud 2  
for Services**  
→ **RDF/SPARQL, OWL**

**Cloud 1 selects; receives  
protocols, interface**  
→ **Web Services; REST API**

**Cloud 1 calls services in  
Cloud 2**  
→ **Metering, SLAs**