

SixSq Cloud Capabilities

Where we are and what's next

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ESRIN / ESA
Frascati, Italy



Locations



North American
Headquarters
Montreal, Quebec, Canada



Global Headquarters
Geneva, Switzerland



Founded in 2007

- ▶ Innovative
- ▶ Cloud expert
- ▶ Knowledge in all main cloud technologies
- ▶ Delivering cloud neutrality





T···Systems···

ThalesAlenia
Space
A Thales / Finmeccanica Company

interoute
from the ground to the cloud



scisys

CGI



Customers

Atos



TERMA[®]

e esa

sixsq.

Partnerships and Collaborations





PaaS
Open Source
Multi-Cloud
Multi-Tenant
...it's all about automation...



Products and Technologies

SlipStream.

+

stratuslab

Products and Technologies

SlipStream.

stratuslab

Products and Technologies

SlipStream.

=

stratuslab

Products and Technologies

NuvlaBox.

Products and Technologies

Products and Technologies



A European cloud computing partnership: big science teams up with big business



HOLIX NUBULA
THESCIENCECLOUD

Strategic Plan

- ▶ Establish multi-tenant, multi-provider cloud infrastructure
- ▶ Identify and adopt policies for trust, security and privacy
- ▶ Create governance structure
- ▶ Define funding schemes

CERN

To support the computing capacity needs for the ATLAS experiment

EMBL

Setting up a new service to simplify analysis of large genomes, for a deeper insight into evolution and biodiversity

esa

i & a DLR CNES

To create an Earth Observation platform, focusing on earthquake and volcano research

PIC
port d'informació científica

To improve the speed and quality of research for finding surrogate biomarkers based on brain images

Suppliers

Atos CGI CloudSigma CSA cloud security alliance DANTE esgi indra interoute MEMSET

SAP sixsq SWITCH ...T...Systems terradue 20 the SERVER DATA ultimum technologies Yandex

Adopters

FWST Capgemini CTS ECMWF Ifremer orange Business Services Telefónica THALES iit Interoperating IT for Mobility

Overview



Helix Nebula Marketplace

A Federated Cloud Services Marketplace

T · · Systems · ·

interoute
from the ground to the cloud

Atos

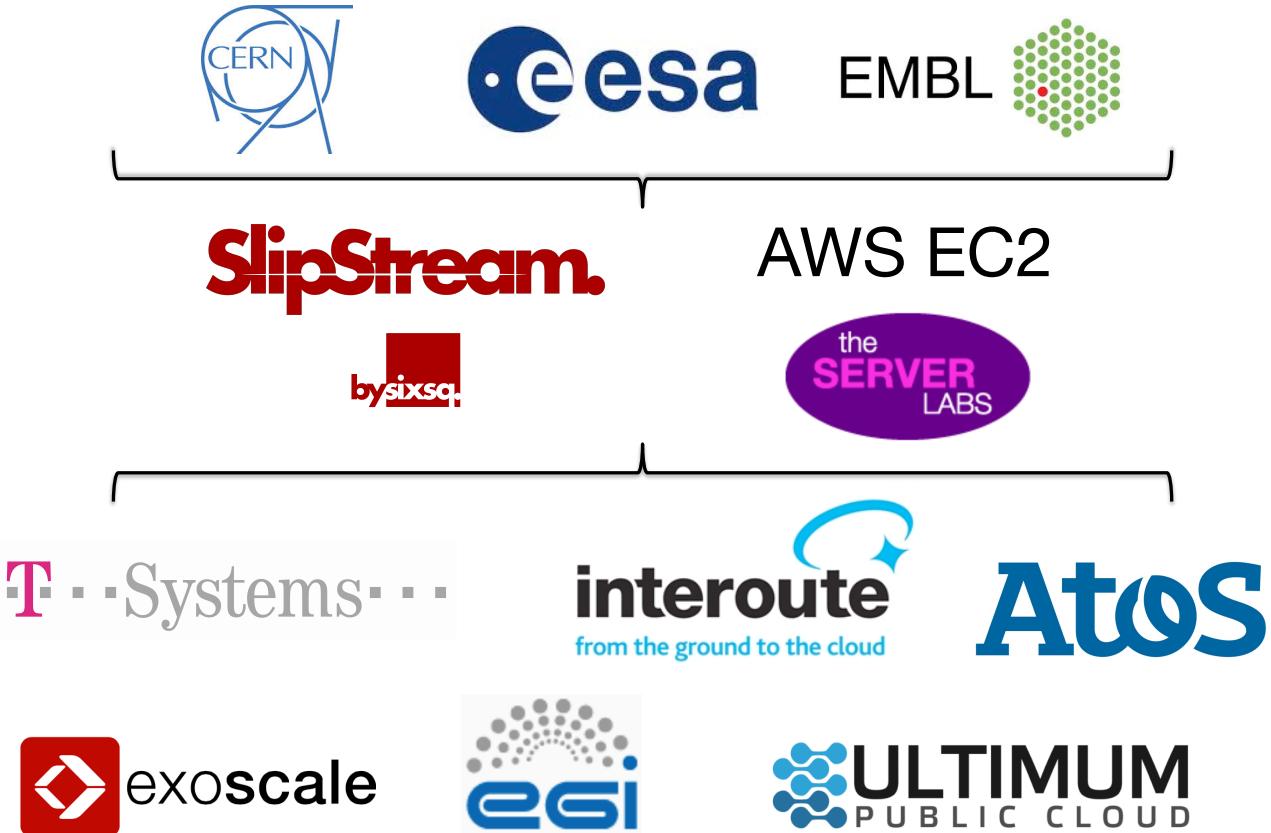
exoscale

esi

ULTIMUM
PUBLIC CLOUD

Helix Nebula Marketplace

Interfacing



Connectivity



T · · Systems · ·





Helix Nebula Marketplace

meb Log in ▾

Welcome to the Helix Nebula Marketplace

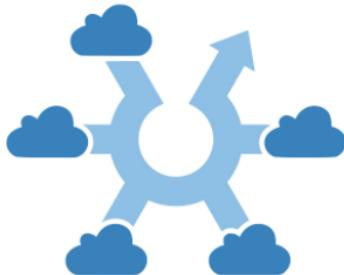
The Helix Nebula Initiative has been established by public and private organisations to build a multidisciplinary cloud platform for data intensive science.

Pick a username

Enter your email

Sign up for SlipStream

By clicking 'Sign up for SlipStream', you agree to our terms of service.



HNX CLOUD MARKETPLACE

The Helix Nebula project is co-funded by the European Community Seventh Framework Programme (FP7/2007-2013) under Grant Agreement no 312301.

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swiss made software

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 HNX CLOUD MARKETPLACE

Dashboard Help ▾ meb ▾

Dashboard

Control and monitor your cloud activity

Home / dashboard

Usage

Resource	Value
atos-es1	1001
cloudsigma-ch1	2
interoute-fr1	0
t-systems-de1	0
t-systems-de1-esa	0

Deployments / Runs / Builds

Virtual Machines

Metering

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EMBL on the Helix Nebula Marketplace...



Helix Nebula Marketplace

Automatic Cluster Deployment

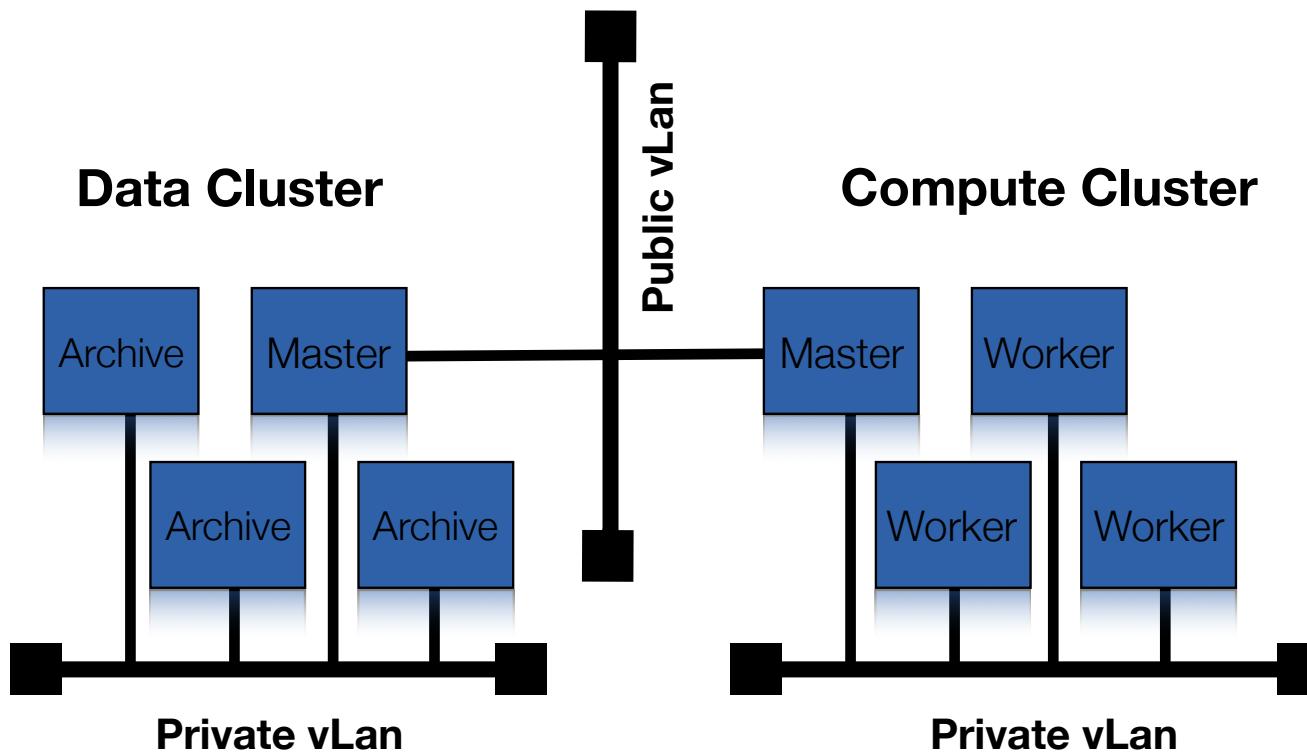
- Goal
 - Facilitate creation of dynamic data processing clusters in the cloud
 - Ignite new data exploitation opportunities
- Solution
 - Interfacing of StarCluster with HNX
 - Using TSL's AWS EC2 bridge
 - Data service (e.g. glusterFS distributed file share)
 - Network connection via GEANT

Automatic Cluster Deployment

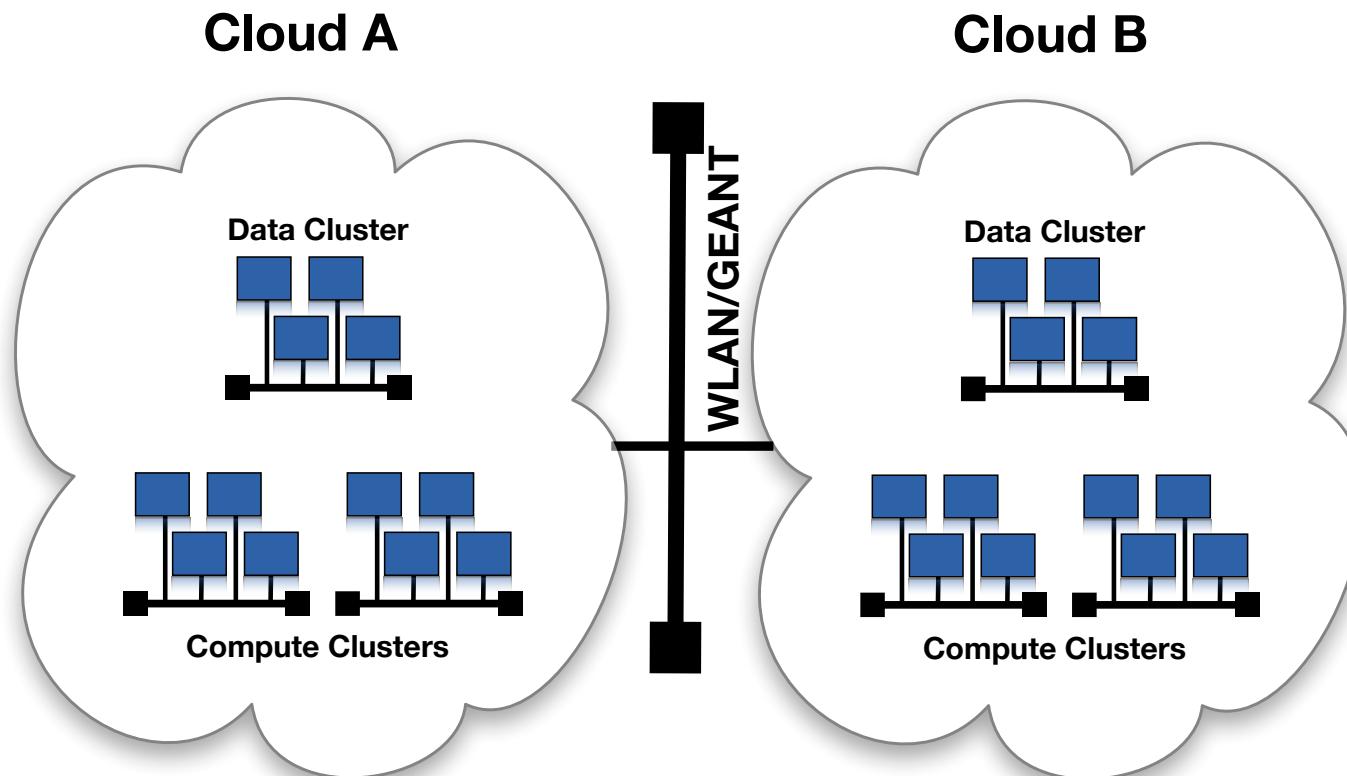
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Deployment Model (simplified)



Deployment Model (simplified)

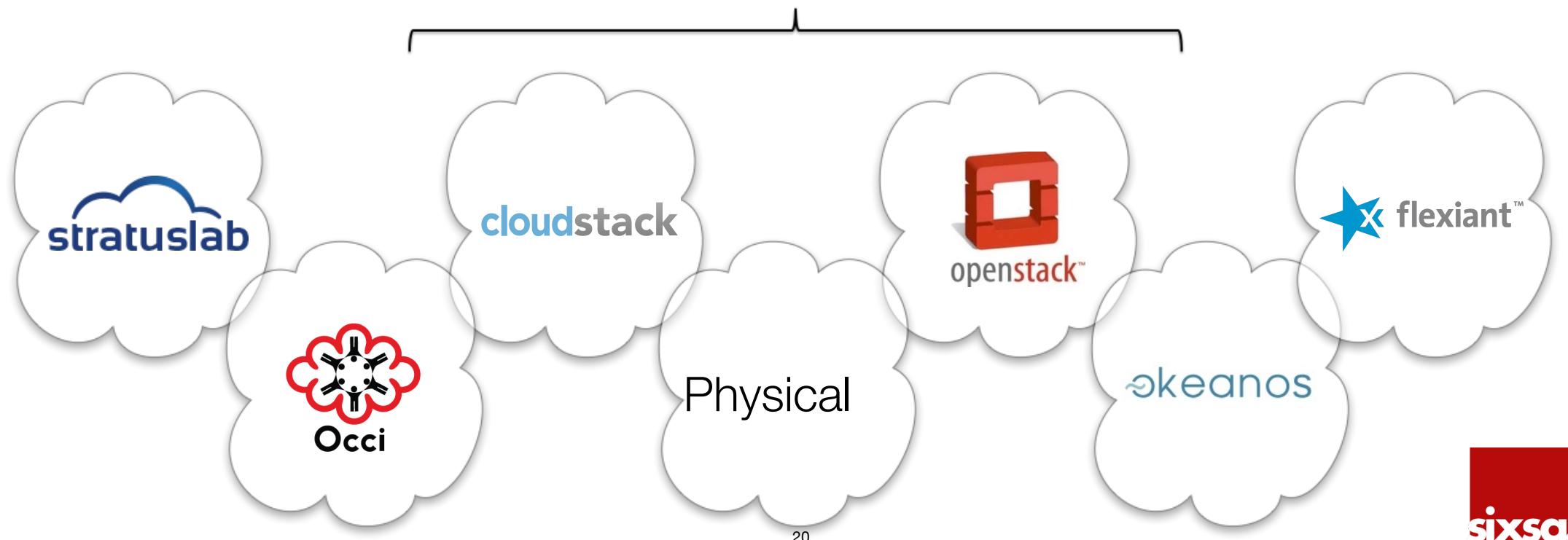




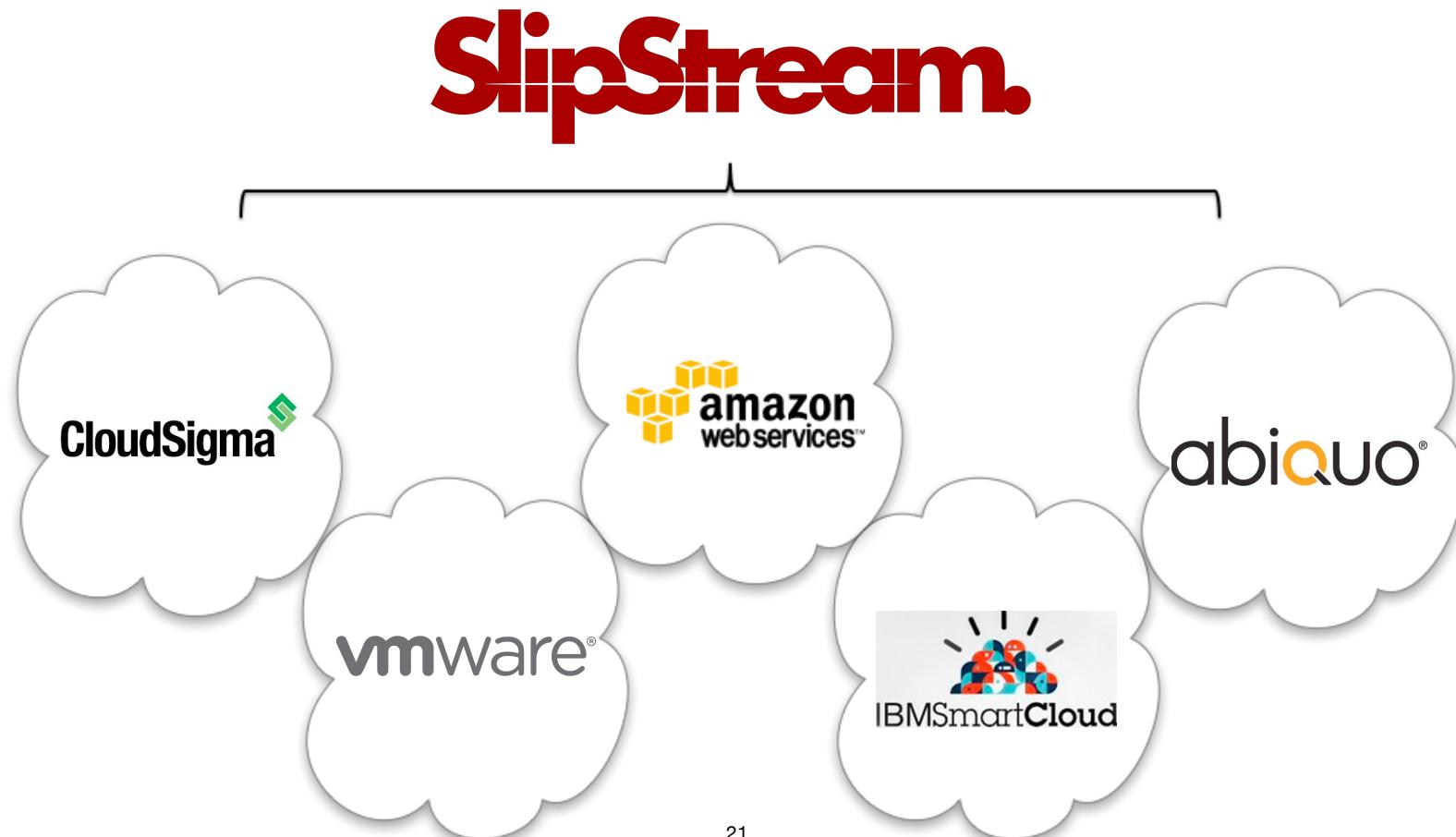
PaaS
Open Source
Multi-Cloud
Multi-Tenant
...it's all about automation...

Supported IaaS (Open Source)

SlipStream.



Supported IaaS (Proprietary)



In a Nutshell

- **Open Source:** Released under the Apache 2.0 license, giving you openness and transparency
- **Professional:** A dedicated team designs, develops, tests and supports SlipStream based solutions
- **Multi-Cloud:** A truly multi-cloud and cloud agnostic provisioning platform giving you freedom of choice, avoiding lock-in

In a Nutshell (2)

- **Multi-Tenant:** Build for enterprise, with multi-tenancy support
- **Automation:** Built-in Enterprise App Store feature makes using SlipStream child's play, without compromising security
- **Scalable:** Used by distributed teams, with demanding workloads, means SlipStream will scale with your usage

Use cases

- **Enterprise App Store / Self-Service IT:** Provisioning applications inside an organisation should be as simple as installing an app on a mobile
- **Hybrid Cloud Provisioning:** The ability to burst or scale-out to public or remote clouds can yield significant tactical, strategic and cost benefits
- **LAMP and complex application provisioning:** What most organisations want is the ability to reason in terms of application or even sets of interrelated applications

Use cases (2)

- **DevOps platform:** Teams need to be able to *fluidify* their development and deployment process, such that apps be deployed in (pre-)production in the most efficient way
- **Cloud Marketplace** (Helix Nebula Cloud Exchange - HNX): Federate several clouds under the same *broker* or *facade* to reduce cloud switchover costs and remove lock-in
- **Auto-Scale and Mutable Deployments:** Grow and shrink cloud resources automatically to reduce cost, improve service quality and security

Beyond IaaS

- Mutable deployments
- Service catalog, for capabilities, pricing, goelocation comparison



Roadmap

- Consolidated usage records (before billing)
- PaaS:
 - High availability enforcement
 - Automatic calling (up/down) based on KPI monitoring
- Multi-tenant unified dashboard
- Organisations with sharing
- More connectors:
 - IBM SoftLayer
 - Microsoft Azure
 - ComputeNext, etc

A photograph of a flock of birds, likely geese or swans, flying in formation against a bright blue sky with scattered white clouds. The birds are silhouetted against the light, showing their dark wings and bodies.

Thanks :-)
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