

# Managing Virtual Resources: “Fly through the Sky”

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# Virtualization Technologies Today

- **Users** don't need to care about software or hardware constraints
- IaaS **platforms** are becoming more popular
  - VMs and data keep increasing
- IaaS **providers** need to continuously invest

# The Sky Platform

- Interconnection of distinct IaaS platforms in order to provide a larger infrastructure to improve **Flexibility**, **Load Balancing** and **Efficiency**
- Most of the management is done today in a **static manner**

# Saline and Entropy

- **Saline:** VM monitoring system that can restart sets of VMs that malfunction due to physical failures
  - ★ Resume can be done **anywhere** in the grid!
- **Entropy:** VM manager for clusters that provides a globally optimized placement of VMs according to **usage** of physical resources and **scheduler** objectives

# A Sky with 3 Clouds



Figure 1: Sky computing platforms composed of three clouds.

# Integration

- **Combine** the available mechanisms to provide:
  - ★ Advanced management **across sky** platforms
  - ★ The ability to VMs to “fly” **from one cloud to another**
  - ★ **Emulation & aggregation** technologies
  - ★ Easy **setup** and **maintenance** from the user point of view

# Project Links

- ASCOLA research group: <http://www.emn.fr/x-info/ascola>
- INRIA MYRIADS team: <http://www.irisa.fr/myriads>
- Entropy project: <http://entropy.gforge.inria.fr>