StratusLab.org

StratusLab Proposal
Enhancing Grid Infrastructures with Virtualization and Cloud Technologies

Cal Loomis

CNRS/LAL

Project Overview

StratusLab: Enhancing Grid Infrastructures with Virtualization and Cloud Technologies

Vision

- Grid and cloud embody **complementary computing models** that will coexist and cooperate in existing and future e-infrastructures

Aim

- Incorporate **cloud/virtualization innovation into existing Grid infrastructures** to:

    - **Simplify** and **optimize** its use and operation, providing a more **flexible**, **dynamic** computing environment for scientists.

    - **Enhance existing computing infrastructures with "IaaS" cloud paradigms**
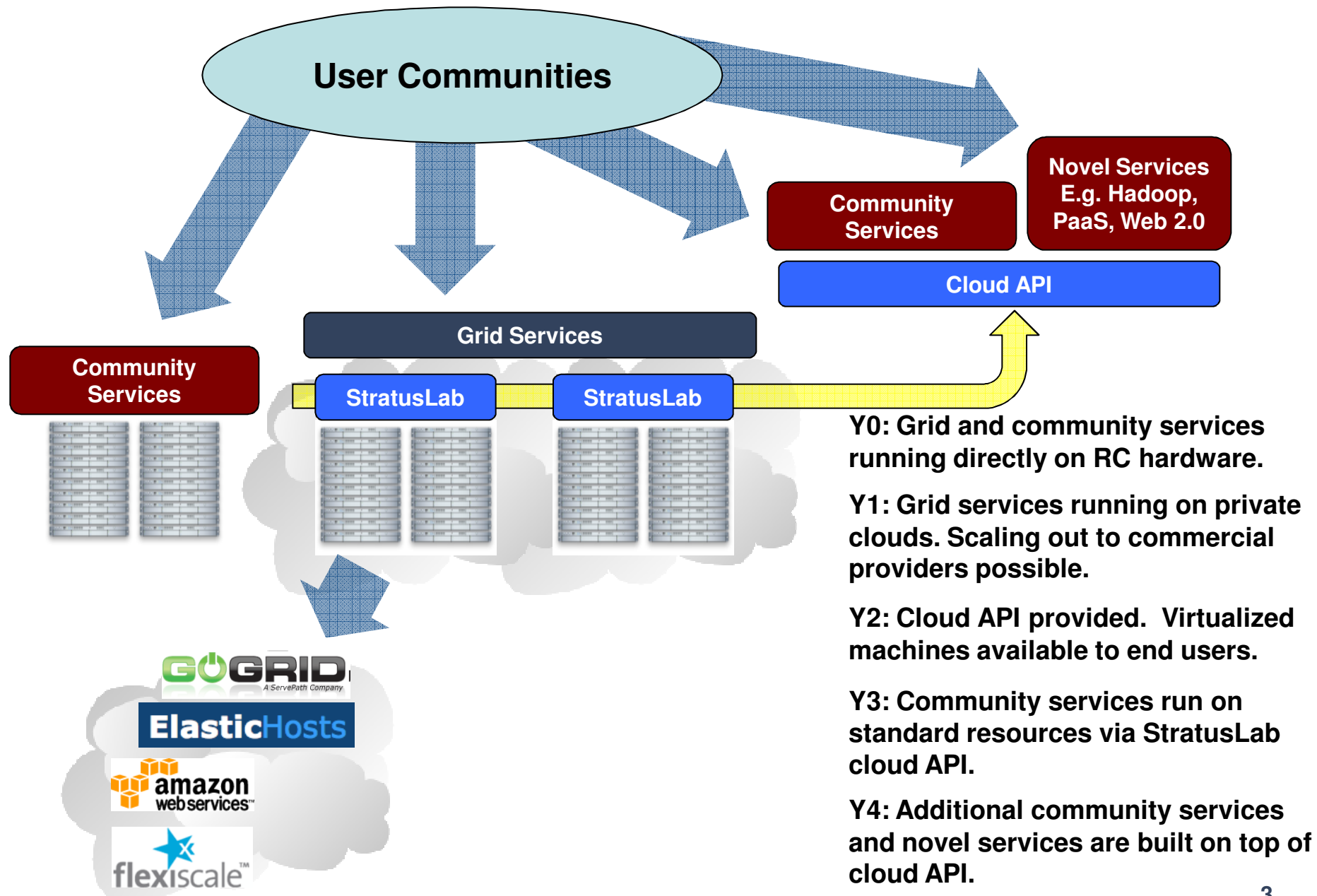
Evolutionary Approach

- **Complement existing middleware services**, being fully transparent to upper layers

- **Existing Grid middleware would continue** to provide the glue to federate the distributed resources and the services for high-level job and data management

- **Address the emerging IaaS cloud-like usage patterns**

Service Centred Project driven to support production infrastructures

- Integration, distribution, testing and maintenance the **StratusLab Toolkit**

User Communities

Novel Services E.g. Hadoop, PaaS, Web 2.0

Community Services

Cloud API

Grid Services

Community Services

StratusLab

StratusLab

Y0: Grid and community services running directly on RC hardware.

Y1: Grid services running on private clouds. Scaling out to commercial providers possible.

Y2: Cloud API provided. Virtualized machines available to end users.

Y3: Community services run on standard resources via StratusLab cloud API.

Y4: Additional community services and novel services are built on top of cloud API.

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Interactions with the Quattor Community

Ensure StratusLab software is easily installed with automated tools

- A major point for project is easing the life of system administrators
- Software must be easy to install, configure, and maintain

Deployment of production grid sites on StratusLab clouds

- Grid services will run on top of private clouds enabled by StratusLab software
- Want to leverage Quattor community's expertise to simplify deployment

Creation of "appliances" for grid and non-grid services

- Want to use Quattor as tool for managing appliance configurations
- Feedback between Quattor community and StratusLab on how to do this

Feedback on providing cloud-like resources

- Later releases will provide direct access to cloud-enabled resources **in addition to** standard grid access methods; feedback on functionality
- Cloud services (migration, etc.) that may simplify resource management