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The Grid4Utility Project

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1. The Global View

What is the Aim of the Grid4Utility Project?

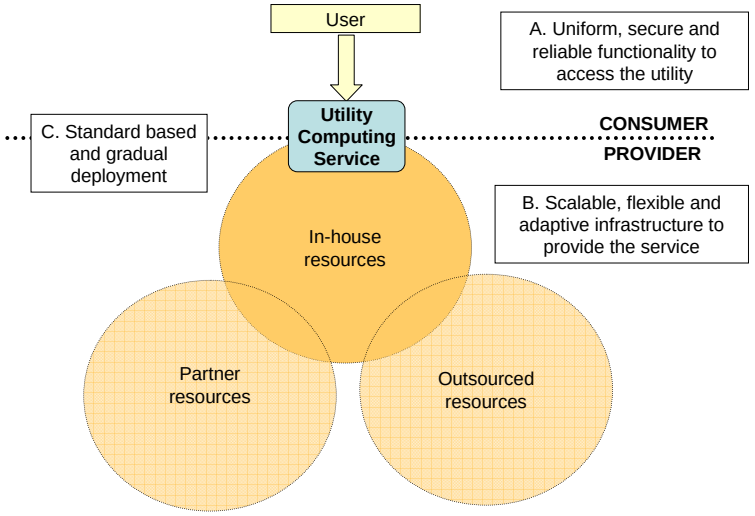
Grid technology that allows companies and research centers to **access their in-house, partner and outsourced computing resources via automated methods** using grid standards in a simpler, more flexible and adaptive way

What is Utility Computing?

- A **new paradigm for information technology (IT) provision** that provides access to the latest computing platform and technology and still be flexible enough to **adjust capacity as required without needing to purchase costly hardware**
- The organization gets charged for how much they use
- Such **pay-as-you-use paradigm** exhibits several potential benefits for an organization:
  - Reducing fixed costs
  - Treating IT as a variable cost
  - Providing access to unlimited computational capacity and improving flexibility
  - Making resource provision more agile and adaptive.

2. Requirements for an Utility Computing Solution

A Utility Solution Involves Full Separation between Provider and Consumer

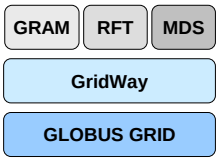


3. Our Proposal

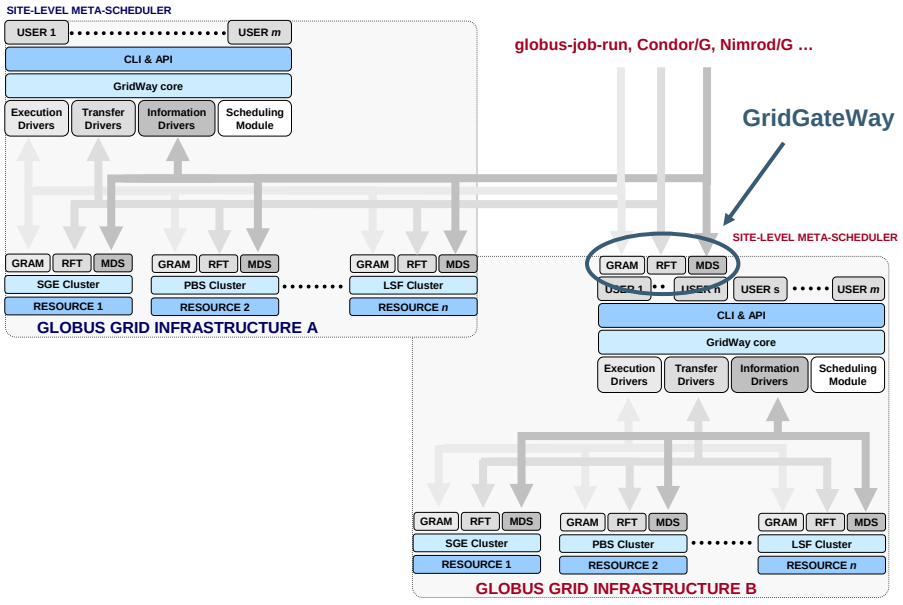
Grid Technology Meets Utility Requirements

The technological feasibility of the utility model for computing services can be established by using a **novel grid infrastructure mainly based on Globus Toolkit components and the GridWay workload manager**:

- The **Globus Toolkit WS services provide a uniform, secure and reliable interface to heterogeneous computing platforms** managed by different DRMS
- The main innovation of our model is the use of **Globus services to recursively interface to the services available in a federated Globus based grid**.
  - A WS-GRAM service hosting a GridWay workload manager provides the standard functionality required to implement a **gateway to a federated grid**
  - Such a combination allows the required **virtualization technology** to be created in order to provide a powerful abstraction of the underlying grid resource management services

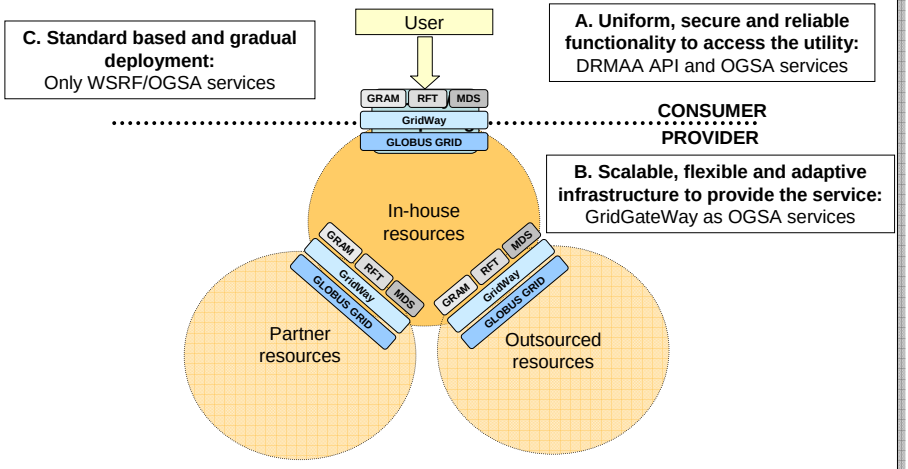


4. Federation of Grid Infrastructures with GridGateWays



4. Federation of Grid Infrastructures with GridGateWays

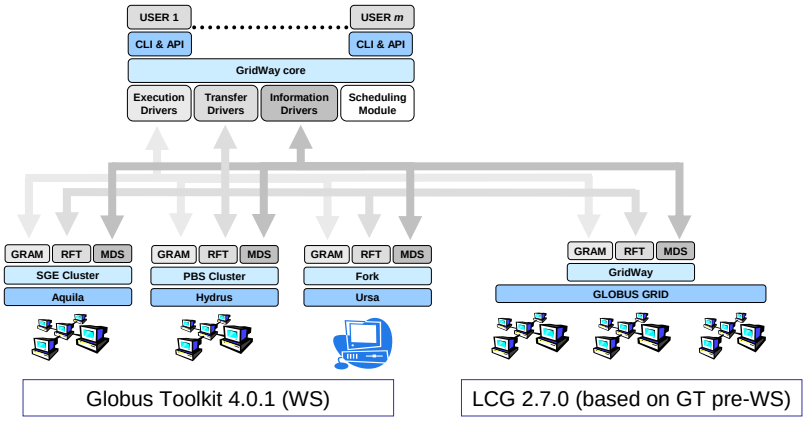
Meeting the Requirements



5. Grid4Utility Demonstration

Grid Infrastructure

Information Manager: Dynamic Discovery & Selection (MDS2 & MDS4)
Execution Manager: Pre-WS and WS GRAM
Transfer Manager: GridFTP
Scheduling Module: FIFO (matchmaking) max. number…



5. Grid4Utility Demonstration

Description

- **Globus job submission** to the GridGateWay
- **GridWay job submission** to the GridGateWay

Future Work

- **Scheduling policies**, taking into account job provenance and resource ownership
- **Security, accounting & billing policies**, locally managed at the GridGateWay hosted at the partner/outsourced Grid

The Grid4Utility Project

Information and download will be available at http://www.Grid4Utility.org
Open source license

Thank you
for your attention!

More information…
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