



# ***The Zorilla Peer-to-Peer Middleware system***

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# ***Current Middleware***

- Hard to install
- Hard to maintain
- Centralized (not very fault tolerant)
- Usually no Co-Allocation

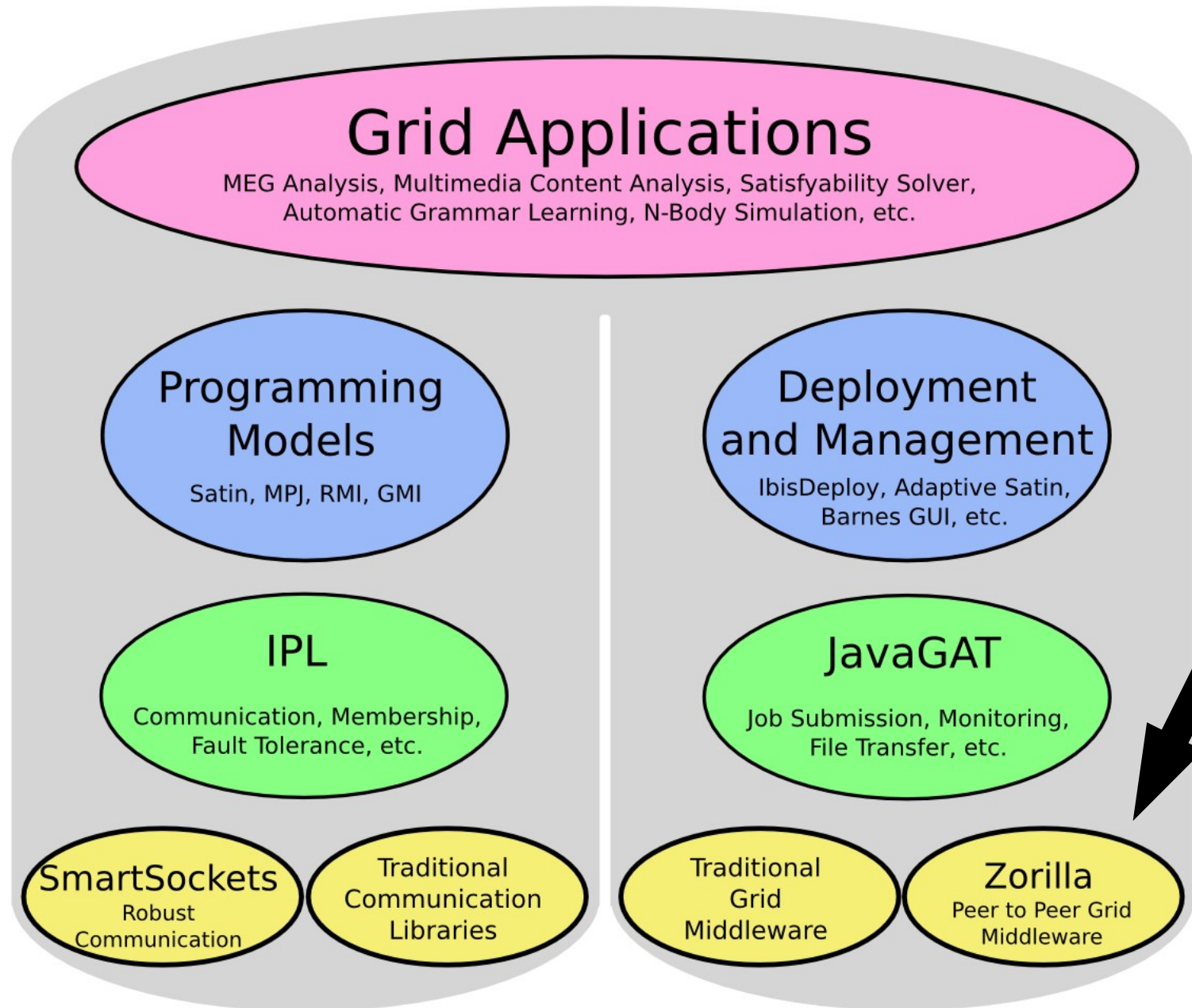


# ***Alternative: Zorilla***

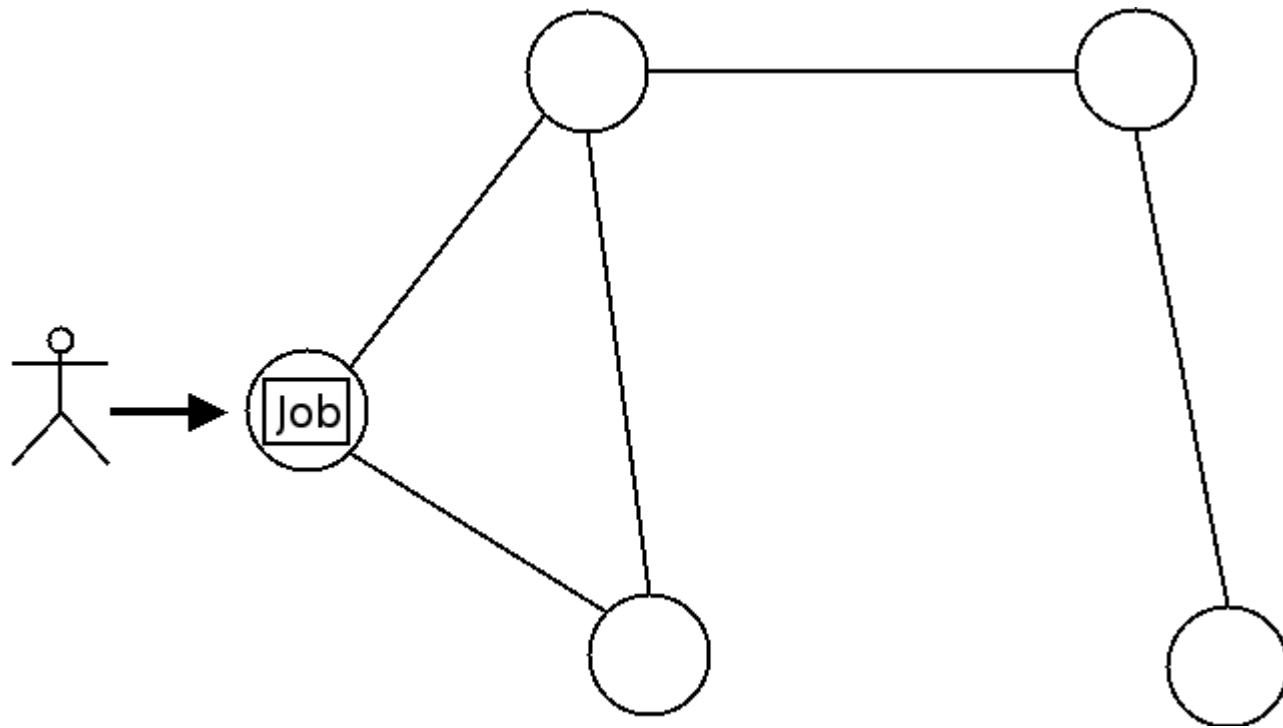
- Prototype Java Peer-to-Peer middleware
- Fully distributed
- Easy to setup (just add Java)
- Fault tolerant (no single point of failure)
- P2P: Limited trust/security
- Interface: JavaGAT



# ***Zorilla in the Ibis project***

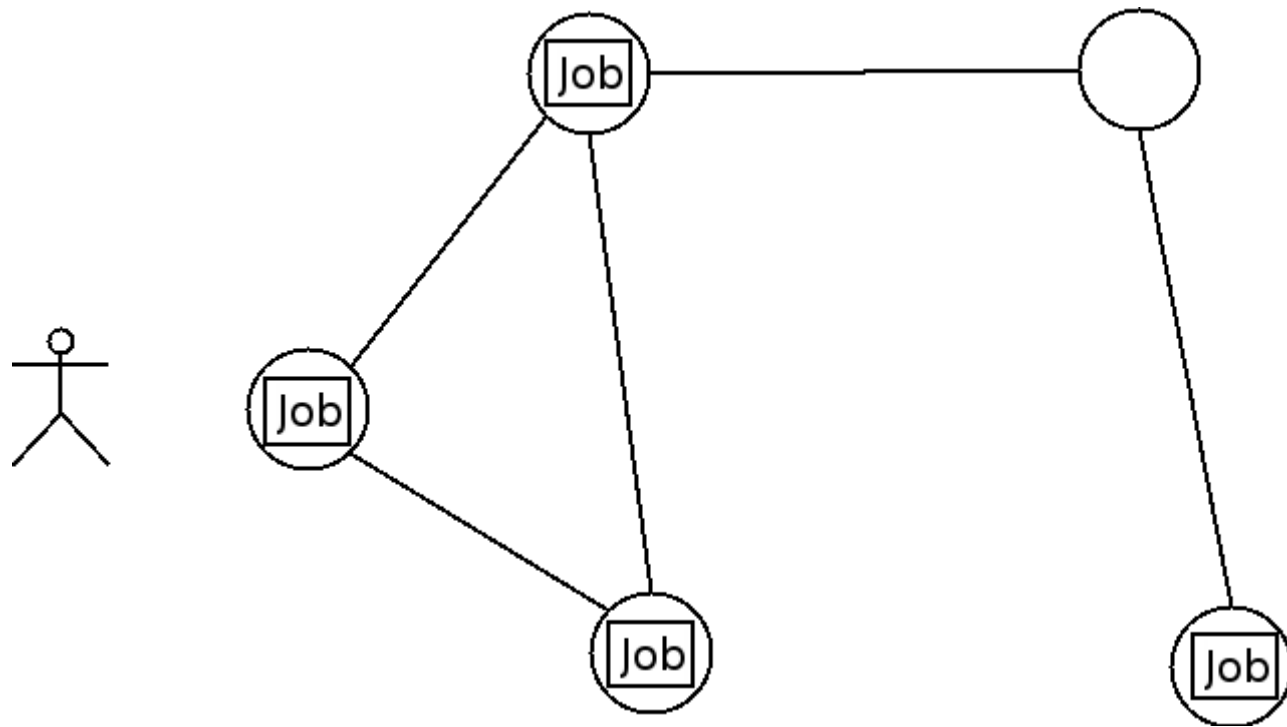


# ***Life of a job (1/4)***



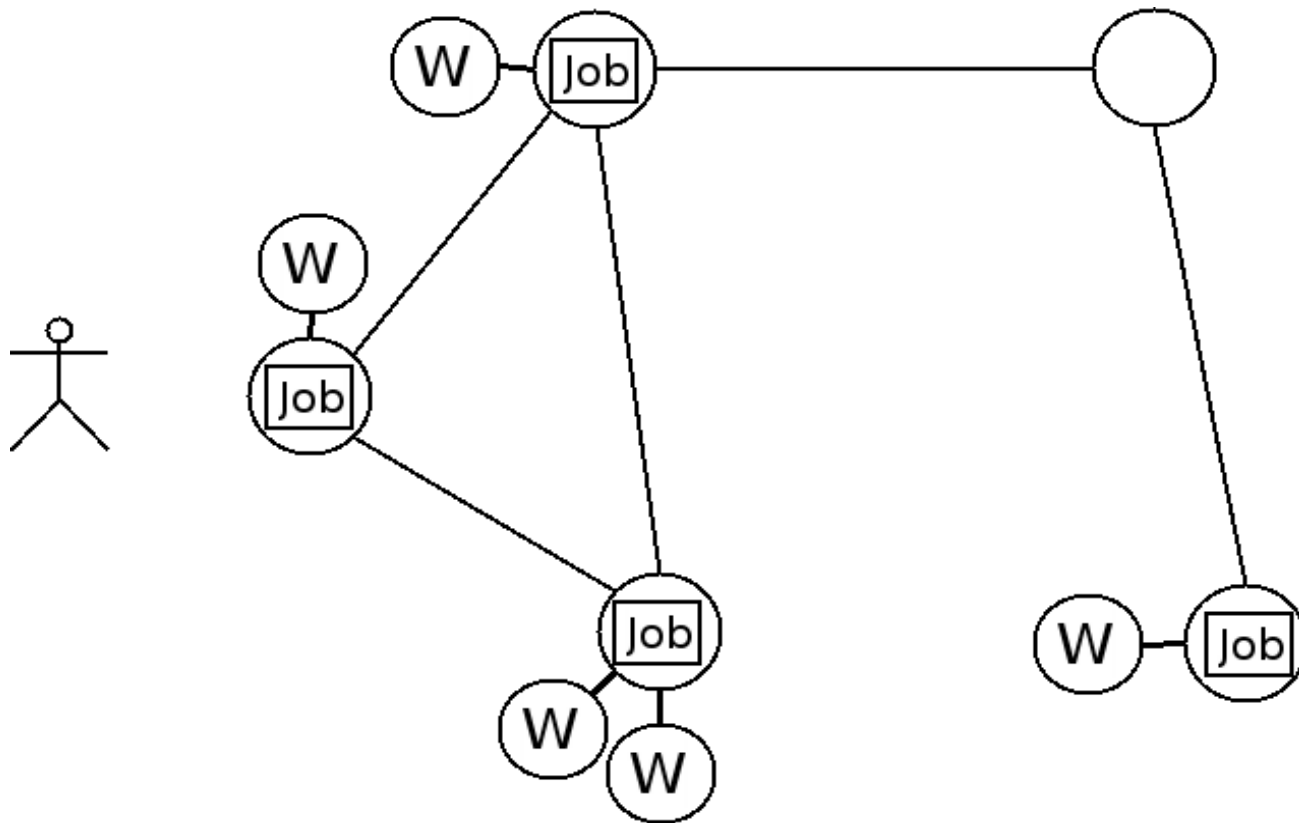
- Submit

## ***Life of a job (2/4)***



- Resource Location

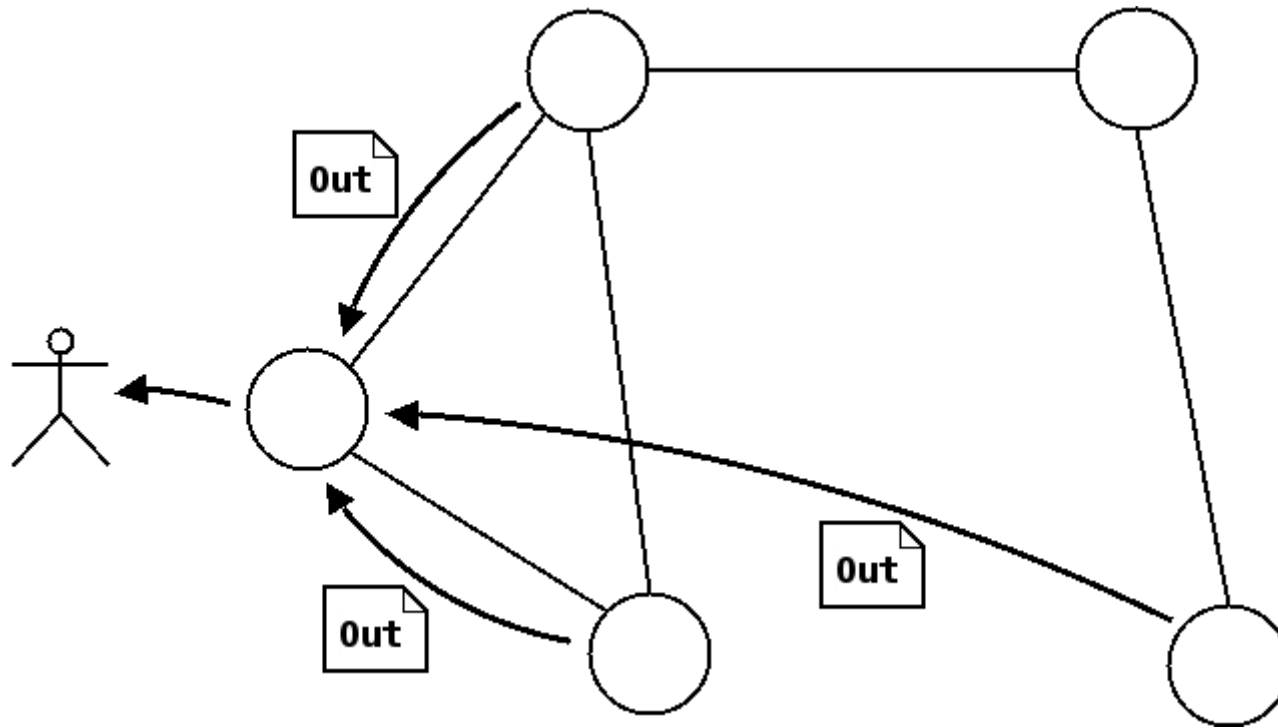
# ***Life of a job (3/4)***



- **Workers Started**

W = Worker running Application

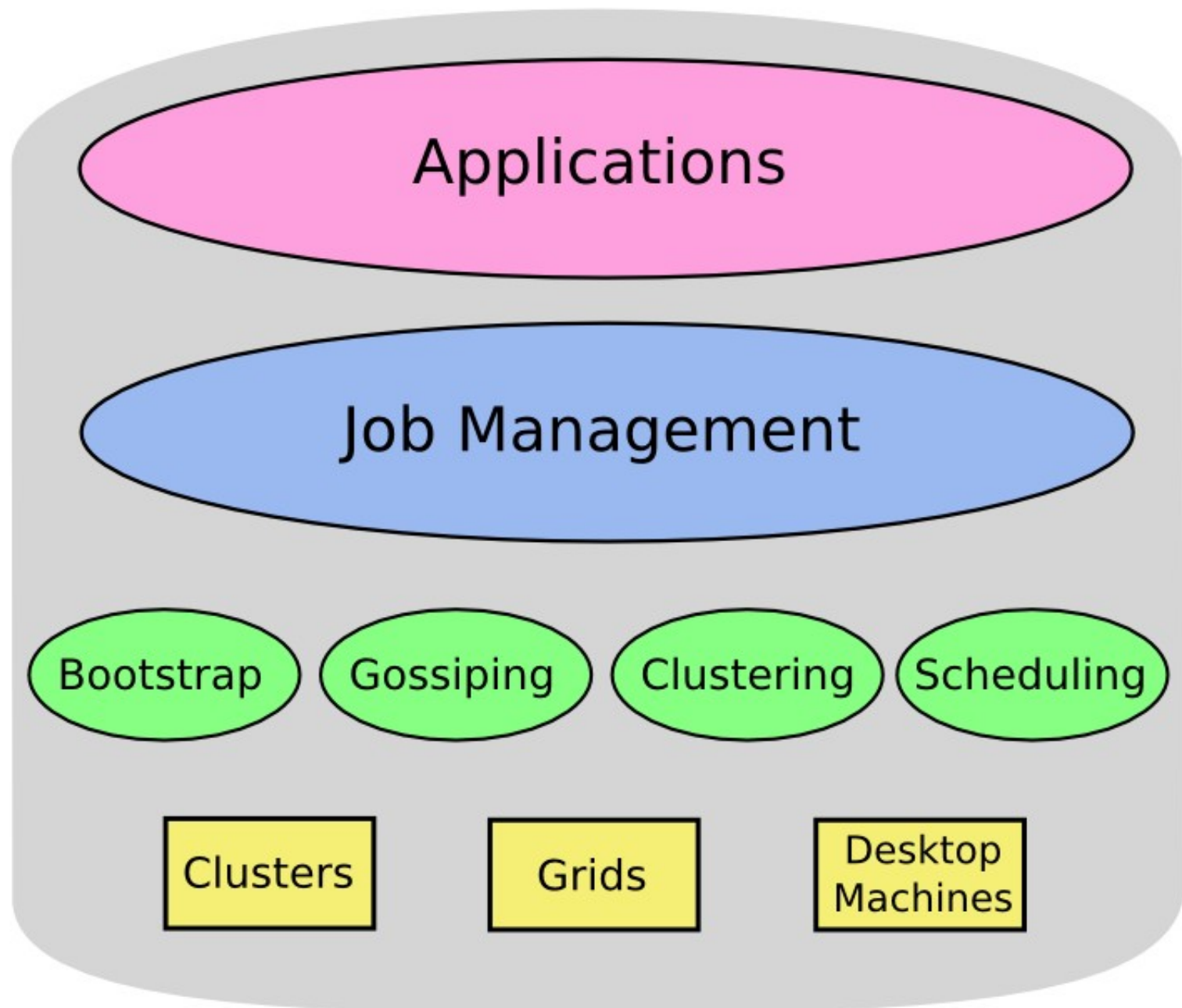
## ***Life of a job (4/4)***



- Results returned to user



# ***Zorilla Overview***



# ***Zorilla Components***

- Bootstrap
  - Initial set of contact points
  - UDP broadcast or provided by user
- Gossip overlay network
  - Actualized Robust Random Gossip (ARRG)
  - Withstands Firewalls et al.
- Clustering
  - Nearest neighbor list



# ***Zorilla Components (2)***

- Flood scheduling
  - Incrementally search for resources at more and more distant nodes
- Job Management
  - Status (scheduling, running, done, etc)
  - File transfers
  - Malleability / crashes



# ***Zorilla Usage***

- 1) Install recent JVM
- 2) Download Zorilla at  
<http://www.cs.vu.nl/ibis>
- 3) Run “zorilla”  
(see --help for options)
- 4) Repeat 1-3 for all machines
- 5a) Start application using JavaGAT
- 5b) Start application using “zubmit”

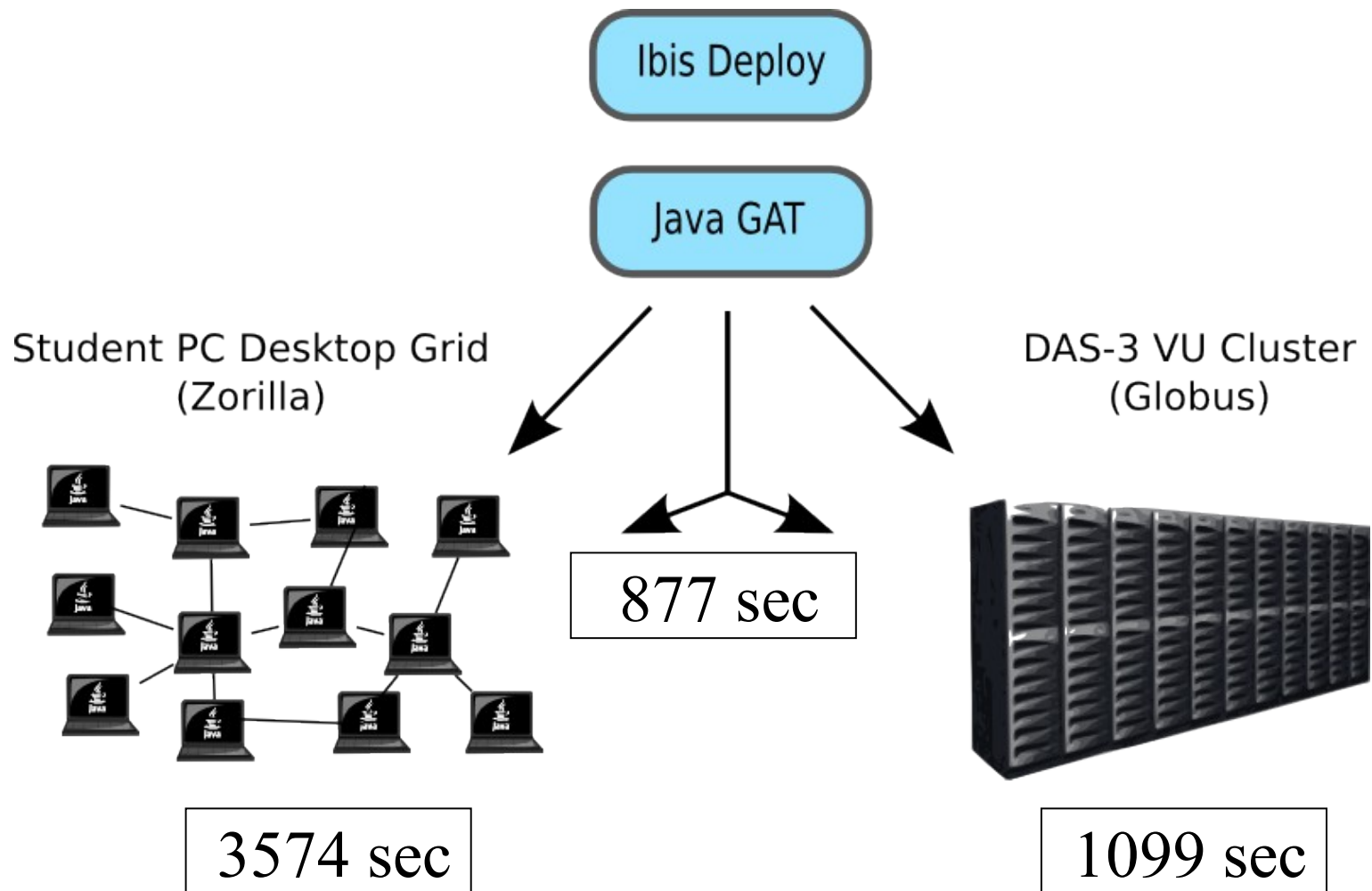


# ***Desktop Grid Experiment***

- Small experimental desktop grid setup
  - Student PCs running Zorilla overnight
  - PCs with 1 CPU, 1GB memory, 1Gb/s Ethernet
- Experiment: gene sequence application
  - 16 cores of DAS-3 with Globus
  - 16 core desktop grid with Zorilla
  - Combination, using Ibis-Deploy



# Desktop Grid Experiment



# ***Questions ?***

**ibis@cs.vu.nl**

**downloads, more info:**

**[www.cs.vu.nl/ibis](http://www.cs.vu.nl/ibis)**

