Synergy

- The problem in OpenStack

  - static partitioning: the resource allocation to the user projects can be done only by granting fixed quotas

    - one project cannot exceed its own quota even if there are unused resources allocated to other projects

  - the user request fails (and is lost) if no resource can satisfy it

- Synergy allows the IaaS administrators to allocate a subset of resources to be shared among different projects, besides the ones statically partitioned

  - shared resources are handled by Synergy which allows the definition of fair-share policies (then enforced by Synergy implementing the algorithm used in the SLURM batch system)

  - Synergy also provides a persistent priority queuing mechanism for handling user requests that can not be immediately fulfilled

- Implemented in the context of the Indigo-DataCloud project

  - Included in the 1st Indigo release (released in August)

INDIGO - DataCloud

total resources

- private (static)
- shared

20
80

shared resources

- project A
- project B

30
70 shares

Synergy

Quota M.

FairShare M.

Keystone M.

Keystone

Nova M.

Nova

Queue M.