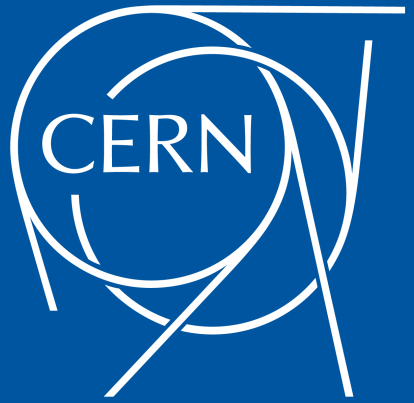

CERN

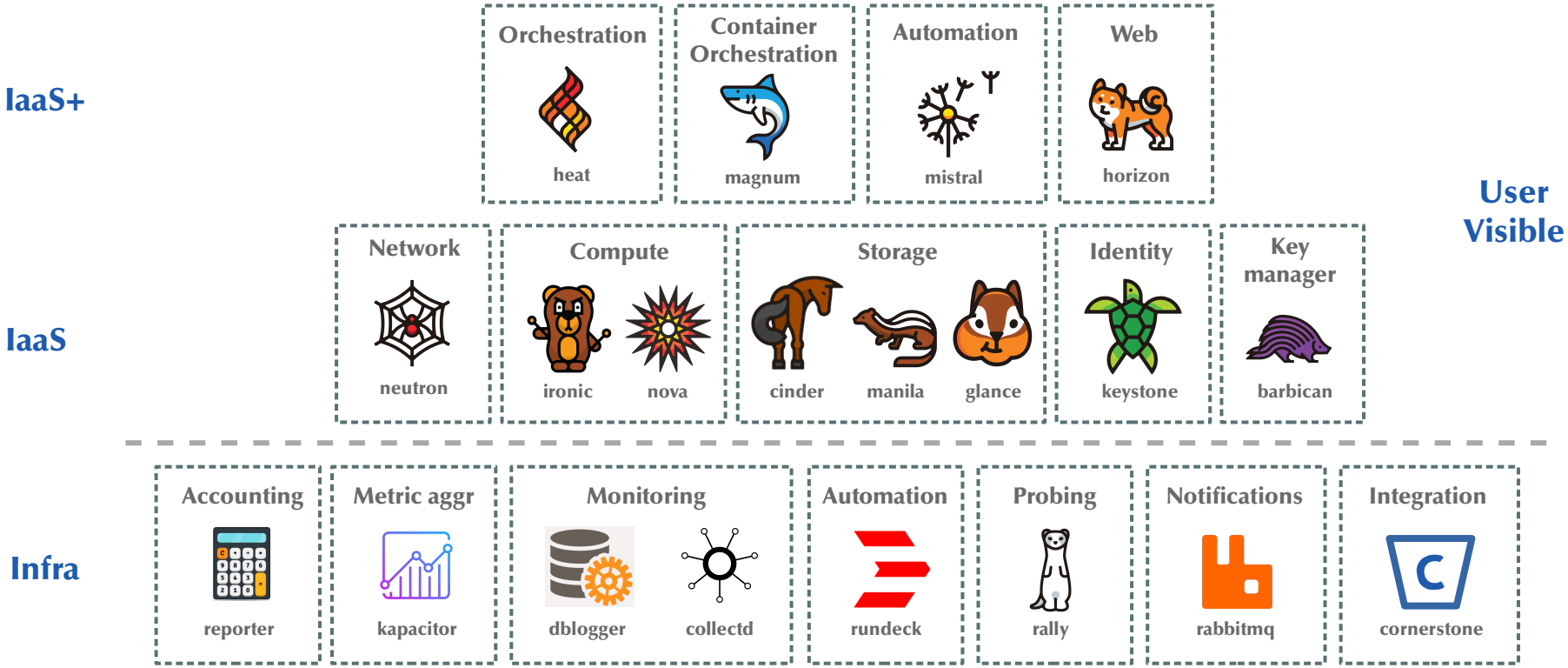
CERN Cloud Infrastructure

José Castro León
CERN Cloud Infrastructure

CERN Cloud Infrastructure

- Infrastructure as a Service
- Production since **July 2013**
- Running on **CentOS 7** and **CentOS Stream 8**
  - Based on Redhat Distribution of OpenStack (RDO)
- Geneva Computer centre (adding a new DC by the end of the year)
- Highly **scalable** architecture
  - 48 cells on 5 regions (working on reducing the number of cells)
- Currently running **Train*** release
  - Some services already in Xena release

CERN Cloud Infrastructure - now



Service deployment

- From shared to "**per service**" architecture
  - Break dependencies between services
  - Some shared components (rabbitmq, loadbalancers, caches)
  - Freedom to update components under the same API/RPC version
- All deployed in VMs on our own infrastructure: *"eat our own dogfood"*
  - Bootstrap procedure and recovery methods
- Puppet managed running on CentOS 7 and CentOS Stream 8 (hypervisors and services)
  - Moving towards RHEL and Almalinux

Service operations

- Deployment upgraded since **July 2013**
- Per-service upgrade model (A/B or in place)
- Compute + Storage availability zones (3 zones each)
- Huge investment on **automation**:
  - Delegate as much as possible administrative tasks (repair team, quota mgmt, end-user)
  - Detect and fix known issues
  - User communication
- Quite some big campaigns:
  - KVM consolidation, Spectre/Meltdown and L1TF, Cold Migration