



Duckling Falcon and Cloud Foundry

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Duckling

- The Duckling Collaboration Environment is a comprehensive resource sharing and collaboration platform to support e-science applications in Chinese Academy of Sciences .
- There are two functionalities of Duckling including the cloud open platform named falcon, and the online cloud services/ applications named “Research Online”



Duckling falcon and Cloud Foundry

- Falcon is a cloud functionality of Duckling, to enable SaaS applications, for its robustness and scalability.
- We integrate Cloud Foundry, which is an open source Platform as a Service (PaaS) project, to provide a faster and easier way to build, test, deploy and scale applications.

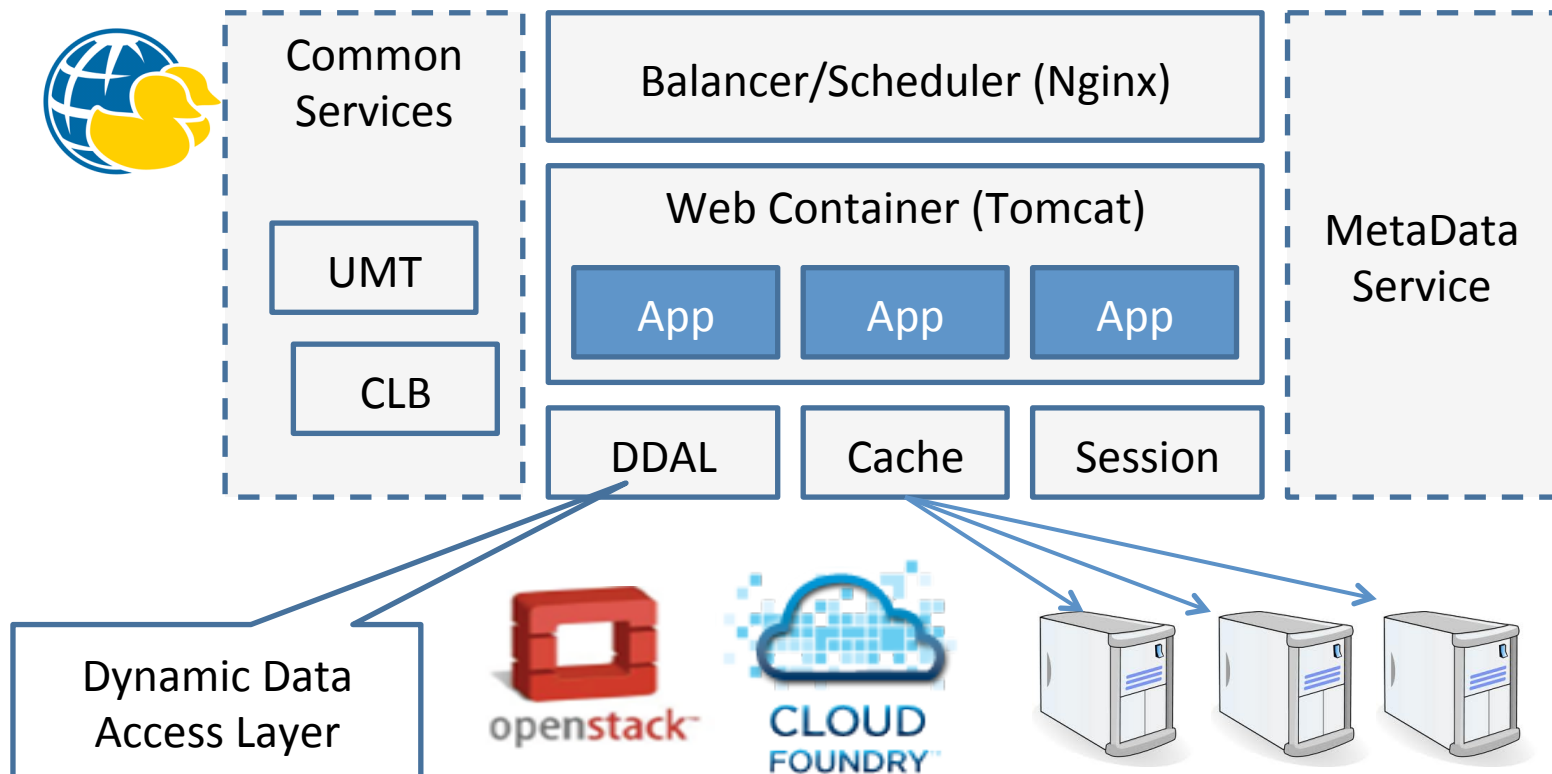


Falcon and Cloud Foundry Functionality

| Functionality | Falcon | Cloud Foundry |
|---|--------|---------------|
| App Auto Deployment | × | ✓ |
| Web High Availability | ✓ | ✓ |
| Multiple Language Support (Java/Python/...) | × | ✓ |
| Service High Availability (MYSQL/MongoDB/...) | ✓ | × |
| Session Stateless (Memcached) | ✓ | × |
| App Instance Migration | ✓ | ✓ |

Objective

- The objective is to integrate the open source PaaS environment - Cloud Foundry, into Duckling Falcon.





Demo case

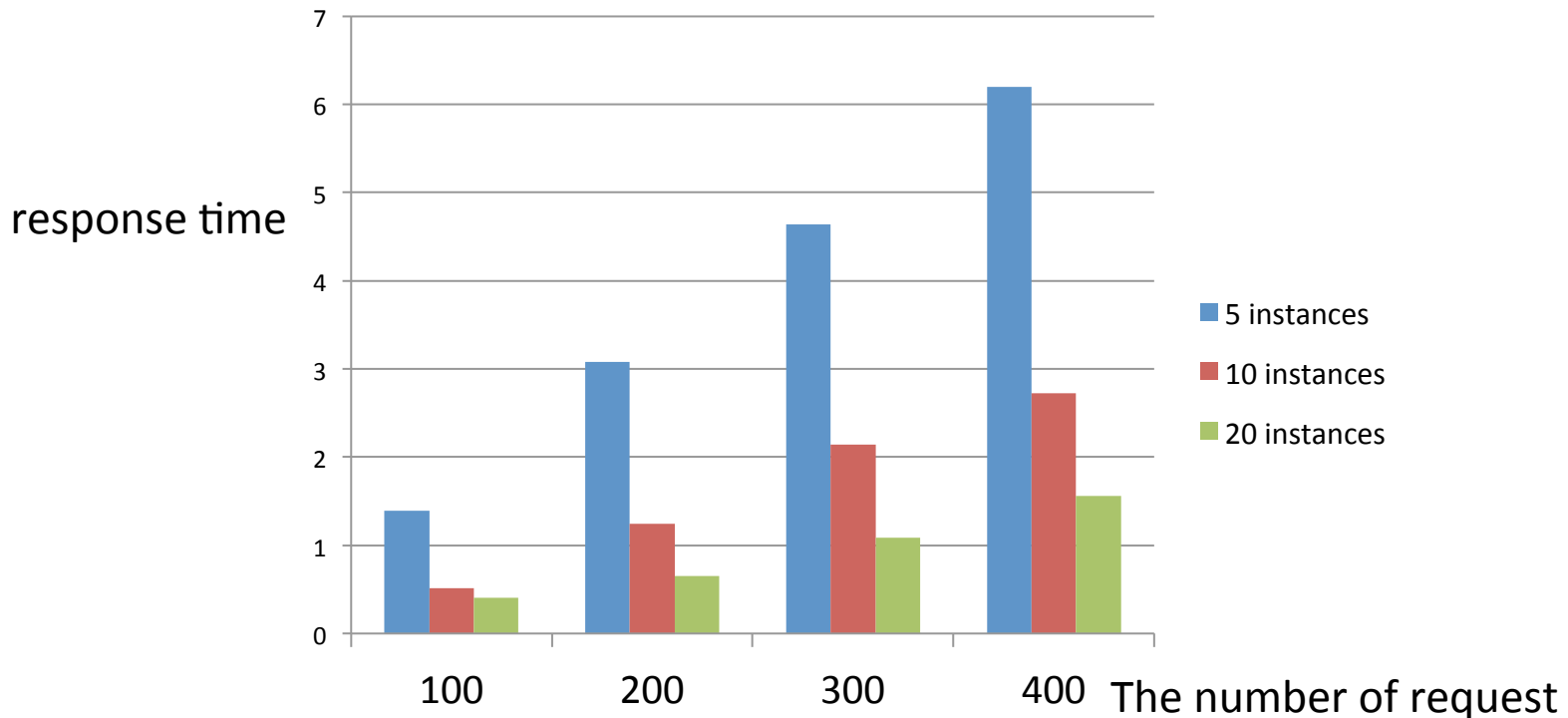
- In the demo case, a falcon-enabled application named “SiteNav” is deployed in the experiment
- A 5/10/20 instances are used as the load balance web container cluster for the SiteNav application.
- The siege tool is used to do the stress test.

Stress test

- siege
 - We simulate 100 users to visit website and each user repeat requests 100, 200, 300 or 400 times.
 - We use 5, 10 and 20 instances to do the test.
 - Then we see how the number of instances can reduce the response time

Stress test result

| | response time | | | |
|--------------|---------------|-----------|-----------|-----------|
| | 100 | 200 | 300 | 400 |
| 5 instances | 1.39 secs | 3.08 secs | 4.64 secs | 6.2 secs |
| 10 instances | 0.51 secs | 1.24 secs | 2.14 secs | 2.72 secs |
| 20 instances | 0.41 secs | 0.65 secs | 1.09 secs | 1.56 secs |





End

- Thank you