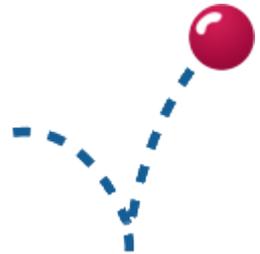


Introduction to S3Proxy and SwiftProxy

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Problem

- Applications written against single cloud provider, e.g., Amazon S3
 - Either using REST API or vendor SDK
- Application → S3 protocol → Amazon
- What happens when you want to move to OpenStack Swift?
 - Rewrite application using another REST API or vendor SDK?

Partial solution

- Portable, multi-cloud toolkits
 - fog, jclouds, libcloud, and pkgcloud
- Allow source code portability between providers
 - Amazon S3, EMC Atmos, Google Cloud Storage, Microsoft Azure, and OpenStack Swift
- Application → jclouds → any provider
- Requires modifying application

S3Proxy and SwiftProxy

- Allow access to other object stores without rewriting your application
 - Instead you change the endpoint
- Provide S3 and Swift REST frontends
 - Separate server processes
- Apache jclouds provides many backends
- Application → S3Proxy → any provider

Features

- Create, delete, and list buckets
- Put, get, remove, and list objects
- Multi-part upload
- Store and retrieve content and user metadata
- Server-side copy
- Multi-object delete

How S3Proxy and SwiftProxy work

- **S3 put object**

```
PUT /kitten.jpg HTTP/1.1
```

```
Host: photos.s3.amazonaws.com
```

```
Authorization: AWS {account}:{signature}
```

- **Apache jclouds put object**

```
blobStore.putBlob("photos", blob);
```

- **Swift put object**

```
PUT /v1/{account}/photos/kitten.jpg HTTP/1.1
```

```
X-Auth-Token: {token}
```



Custom middlewares

- Consider using S3Proxy and SwiftProxy without protocol translation
 - S3 application → S3Proxy → Amazon
- Having a proxy allows implementing custom middlewares
 - Authentication, compression, logging, QoS, quotas, tiering, etc.
- No application or provider support required

Other uses

- Local testing with filesystem backend
 - Replace Amazon S3
 - Replace Swift All In One
- Use S3-based FUSE file systems
 - s3fs, s3ql, s3backer, etc.
- Substitute for swift3 middleware on public providers, e.g., Rackspace CloudFiles
- Yours!

Looking forward

- Object versioning
- Server side encryption
- Expand ACL support
- Partial Amazon Glacier support
- Improve test coverage
 - Ceph s3-tests
 - Swift integration tests

Summary

- S3Proxy and SwiftProxy offer protocol translation and allow custom middlewares
- Apache-licensed, Java implementations
- <https://github.com/bouncestorage/s3proxy>
- <https://github.com/bouncestorage/swiftproxy>