

VIRTUAL EXPERIENCE

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ENTER. DISCOVER. ADVANCE.

Apache Deltacloud

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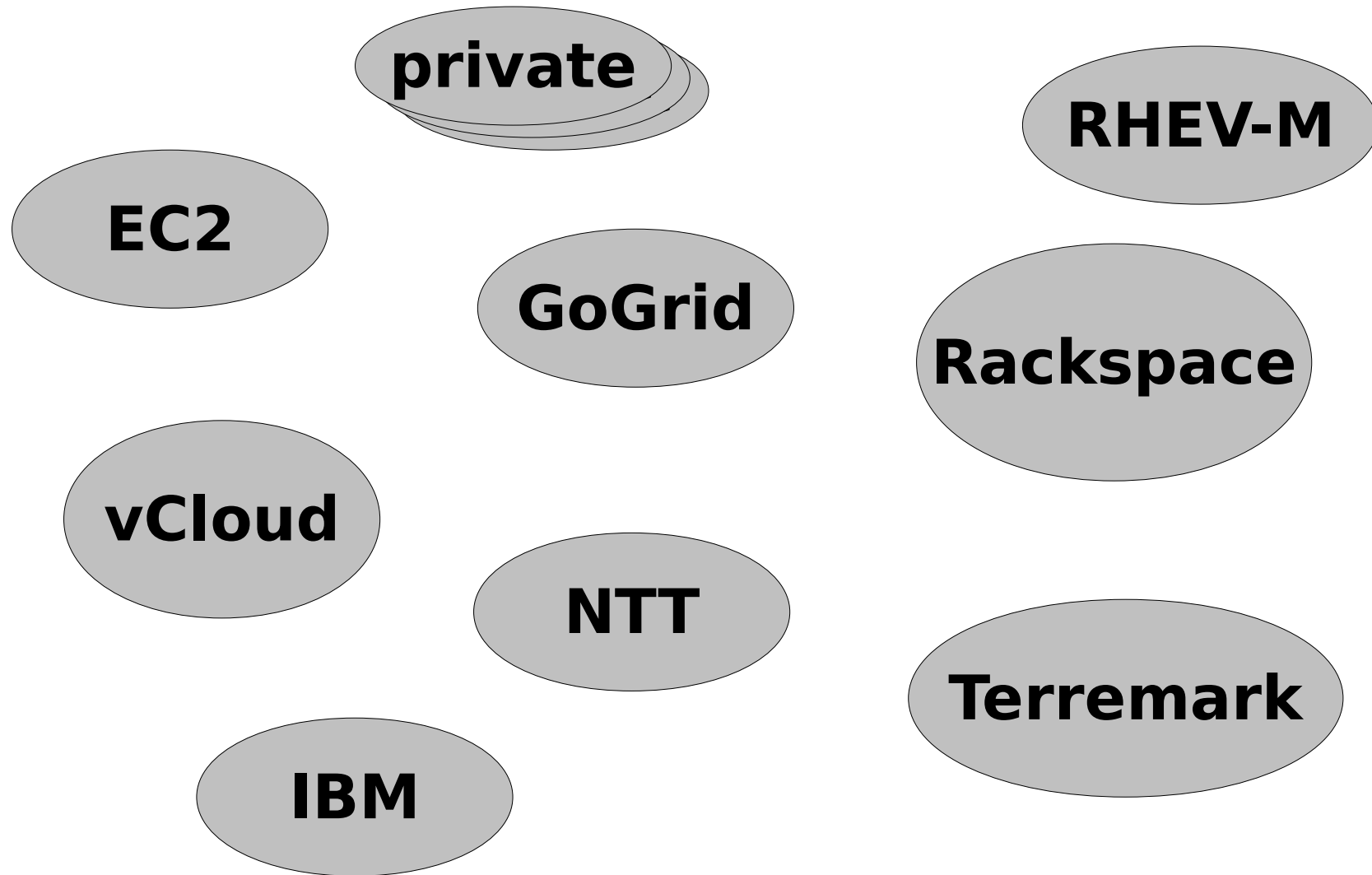
Principal Software Engineer

Red Hat, Inc.

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The Problem (part 1)



The Problem (part 2)

RHEL

Linux

Windows

RHEL

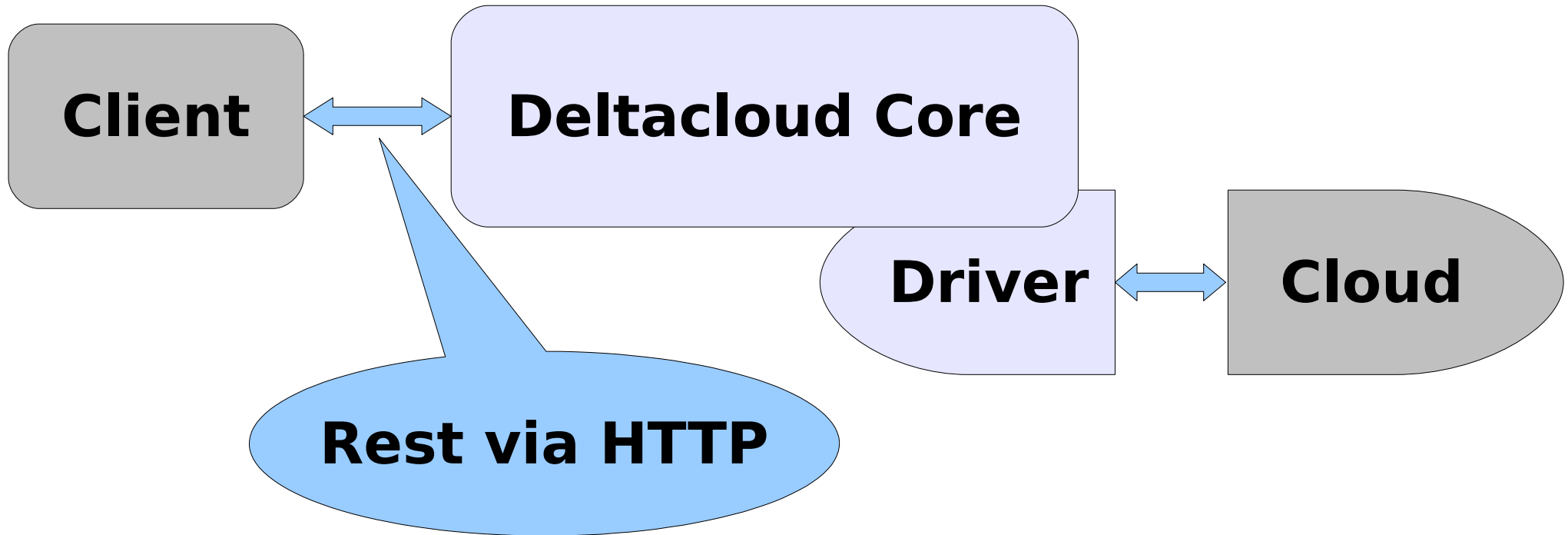
Proprietary Management

Open Source virt (kvm/xen)

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Core Architecture



Not a library ...

Libraries

- jclouds (Java)
- libcloud/boto (Python)
- fog (Ruby)

Webservice

- Deltacloud

... but many clients

- CLI
- Ruby
- Java
- C
- Python

Core State of Affairs

Images

Hardware Profiles

Realms

Instances

Volumes

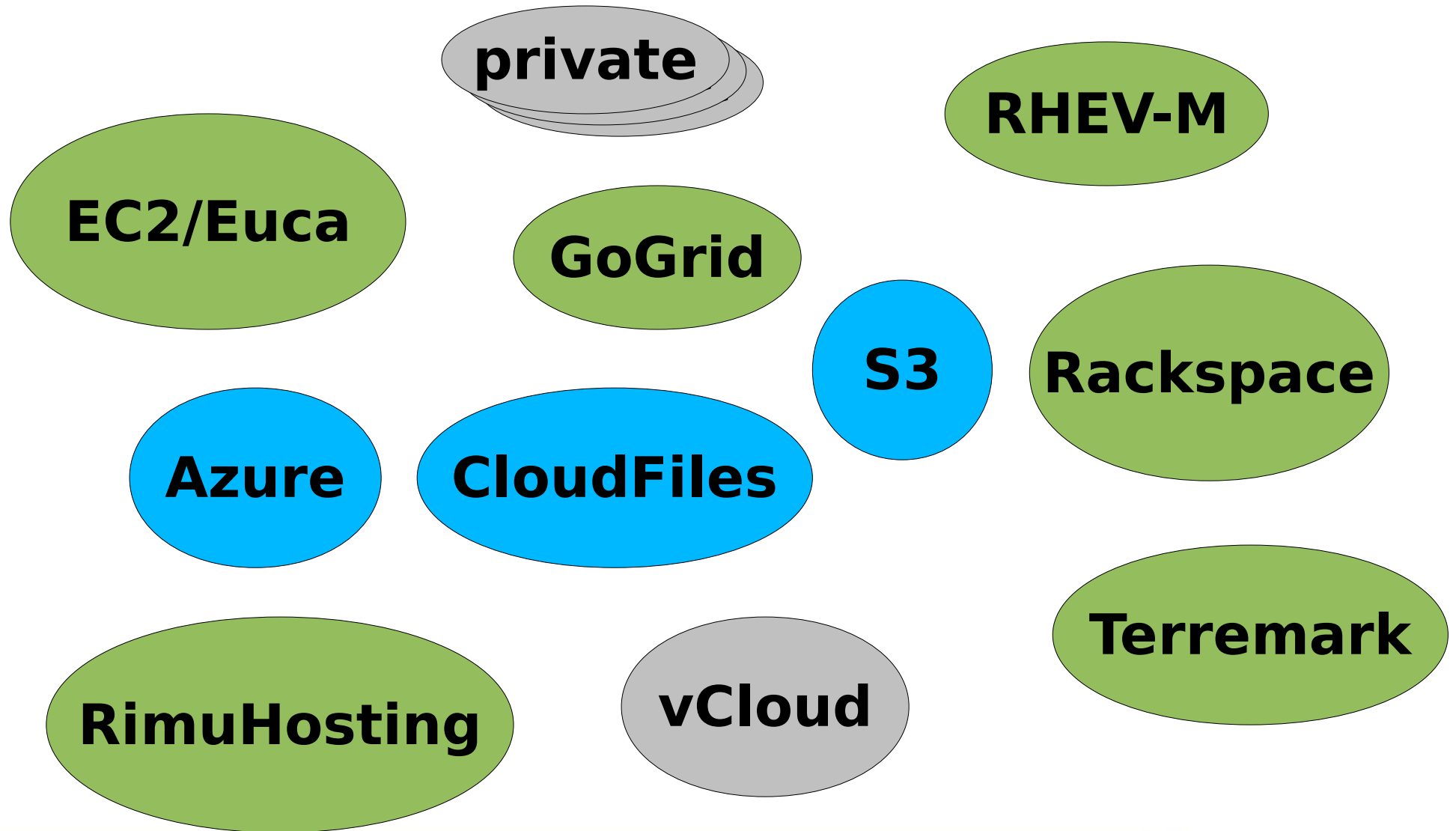
Instance States

Buckets/blobs

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Core Support



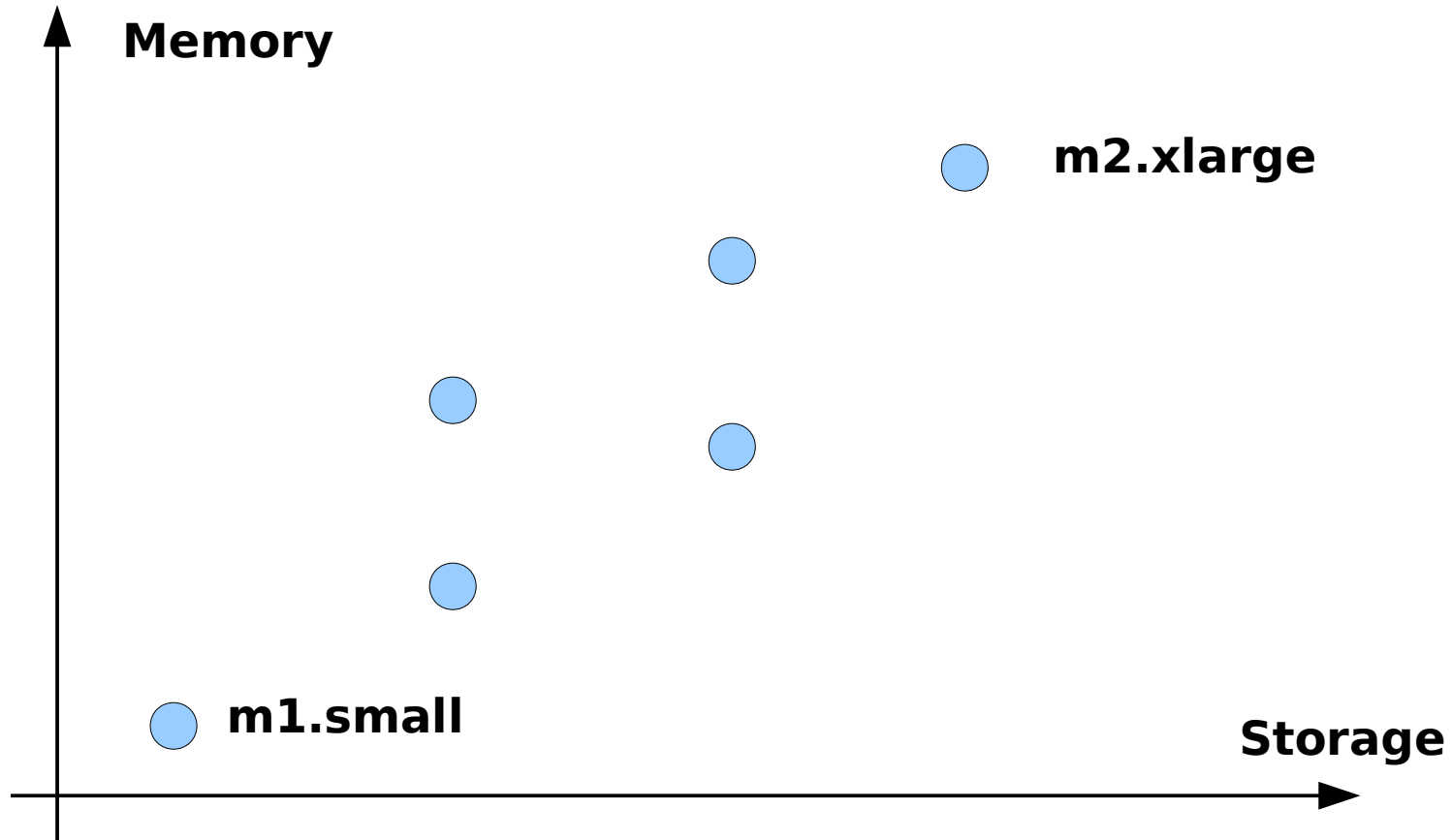
API Principles

- One entry point
 - discover remainder of API from there
 - follow REST best practices
 - collections of objects
- Not lowest common denominator
- Base API + optional additions
 - Abstraction
 - Introspection
 - Features

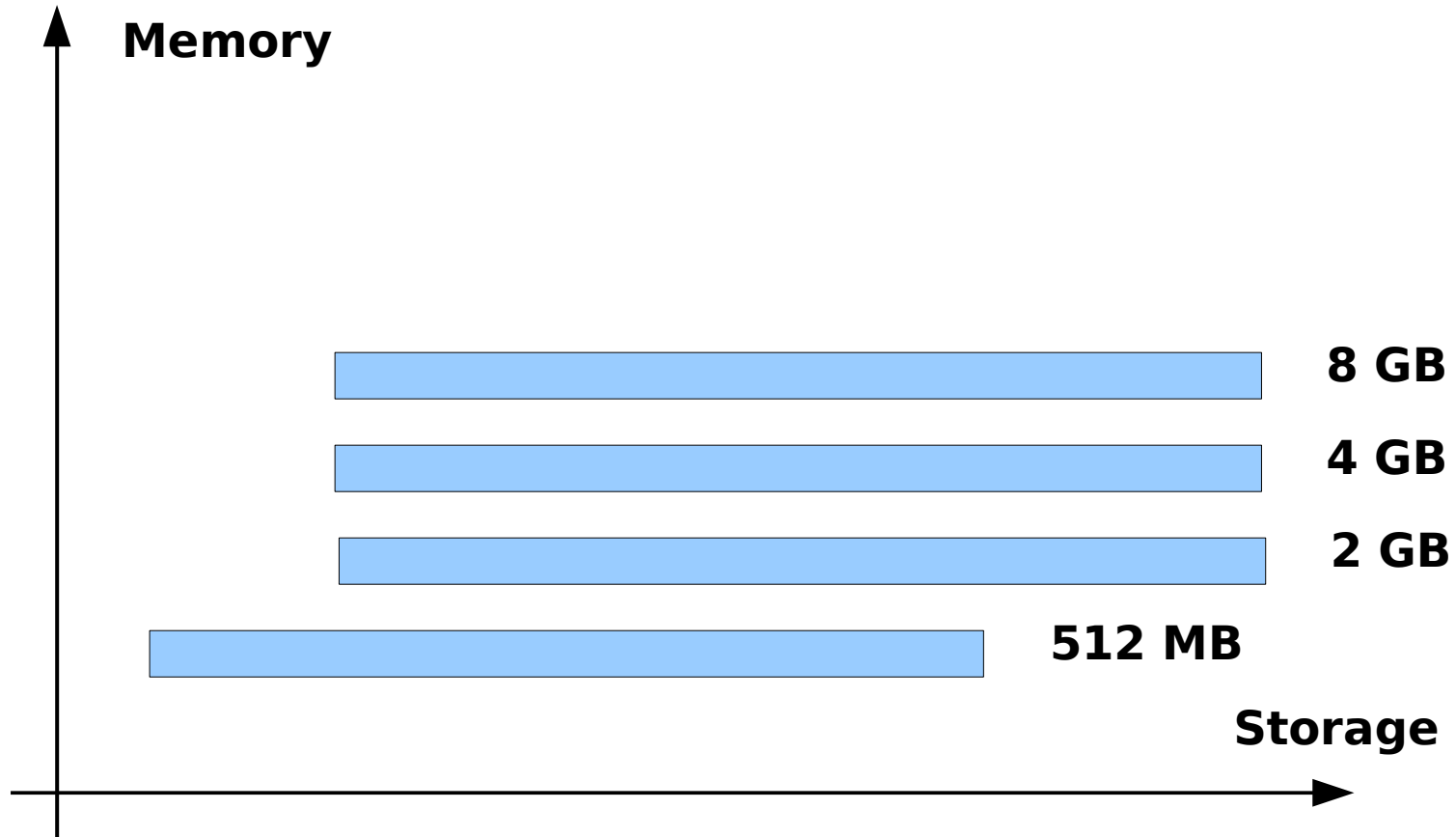
Abstraction: Hardware Profiles

- Model description of virtual form factor
 - Huge differences between clouds
 - Model flexible enough to encompass them all

Abstraction: Hardware Profiles



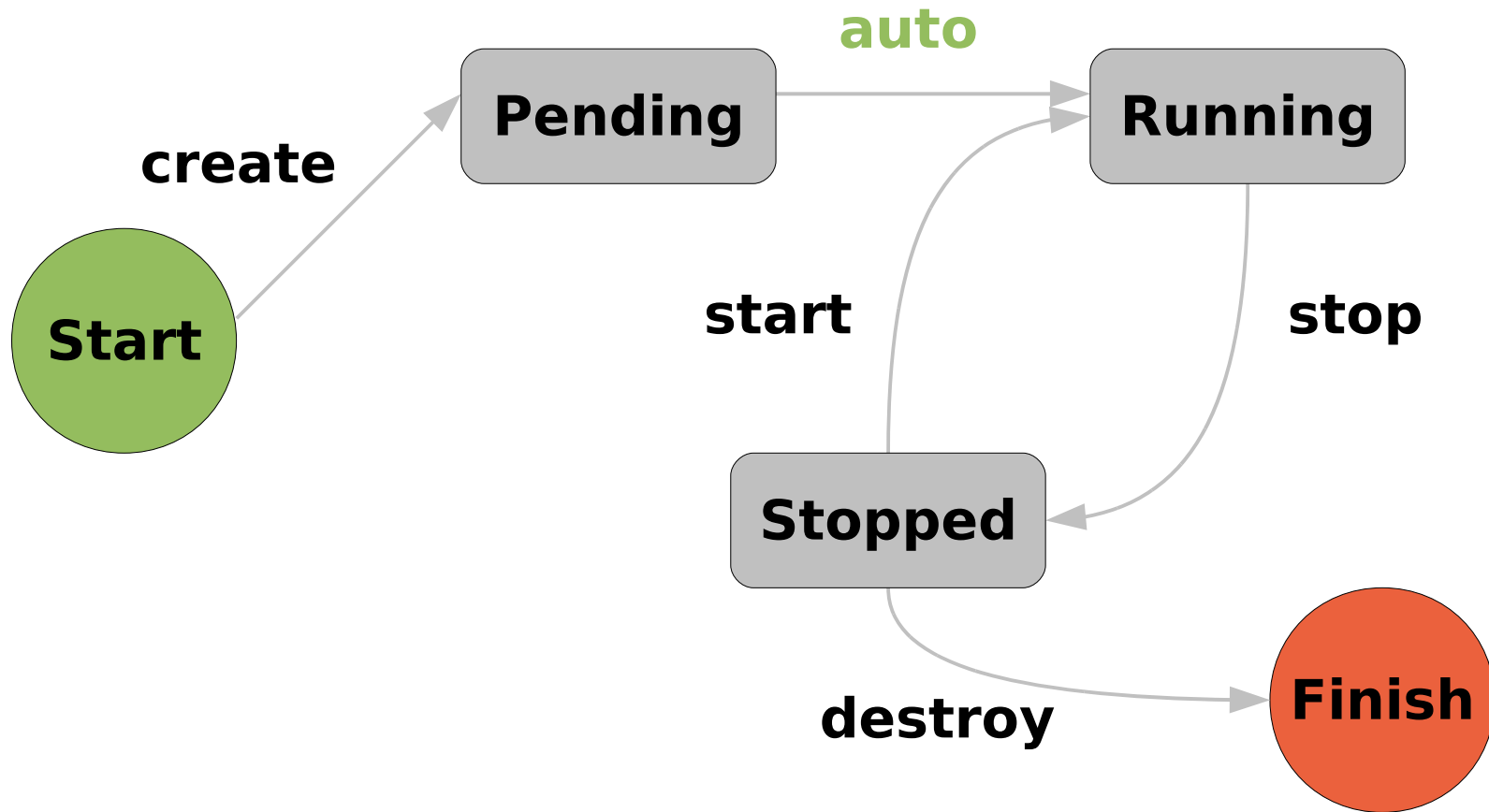
Abstraction: Hardware Profiles



Introspection: Responses

- Only mention supported collections
 - No instances in storage-only driver
- Each instance links to possible actions
 - avoids complex business logic in client
 - general overview through instances states
- Login details (usually for ssh)
 - Password vs. ssh key

Introspection: Models



Introspection: Features

- Advertise optional capabilities
 - Data injection
 - User-supplied name for instances
 - Bucket location in S3
- Part of entry point XML

Introspection: Features

```
<api driver='mock' version='1.0'>
```

```
...
```

```
<link href='/api/instances' rel='instances' >
```

```
  <feature name='user-name' />
```

```
</link>
```

```
...
```

```
</api>
```

Deltacloud Future

- Create images
- Runtime driver selection
- Drivers
 - revamp RHEV-M driver
 - vCloud
 - Google storage
- Firewalling
- Accounting

Deltacloud Future

- Automated testing against actual clouds
- Formal API docs
- Technology Compatibility Kit

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Project Info

<http://incubator.apache.org/deltacloud/>

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