



OPENSTACK DAYS
CHINA

Topic: OpenStack数据保护

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李明宇 from OStorage (奥思数据)



Protect Your Data



Power outage



Hardware fault



Natural disaster



Network issue



Human error

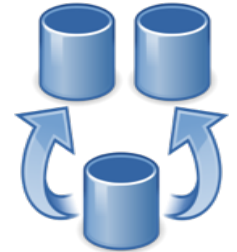
Solution Diversity



Backup

vs

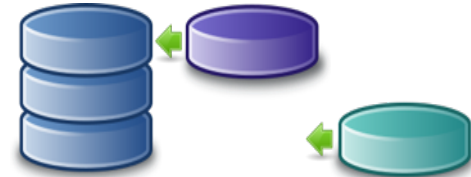
Replication



Differential backup

vs

Incremental backup



On site

vs

Cross site



Hardware replication

vs

Software replication



✓ 后端数据存储

✓ **Swift**

✓ 备份、快照、复制、镜像的基础项目

✓ **Nova (VM)**

✓ **Cinder (Block)**

✓ **Manila (File)**

✓ **Glance**

✓ 提供上层服务的独立项目

✓ **Freezer**

✓ **Smaug**

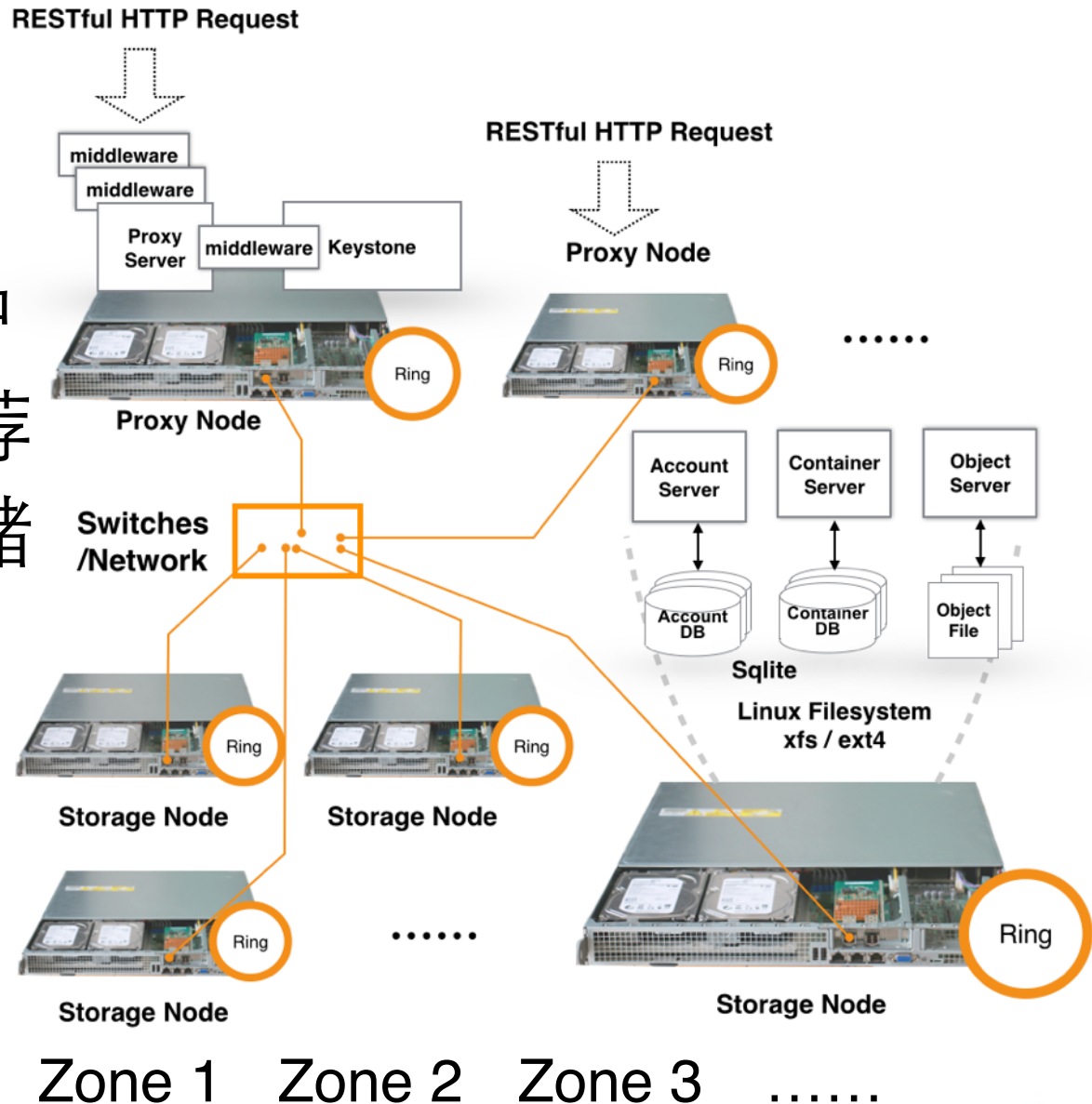
✓ **Ekko**

✓ **Raksha**

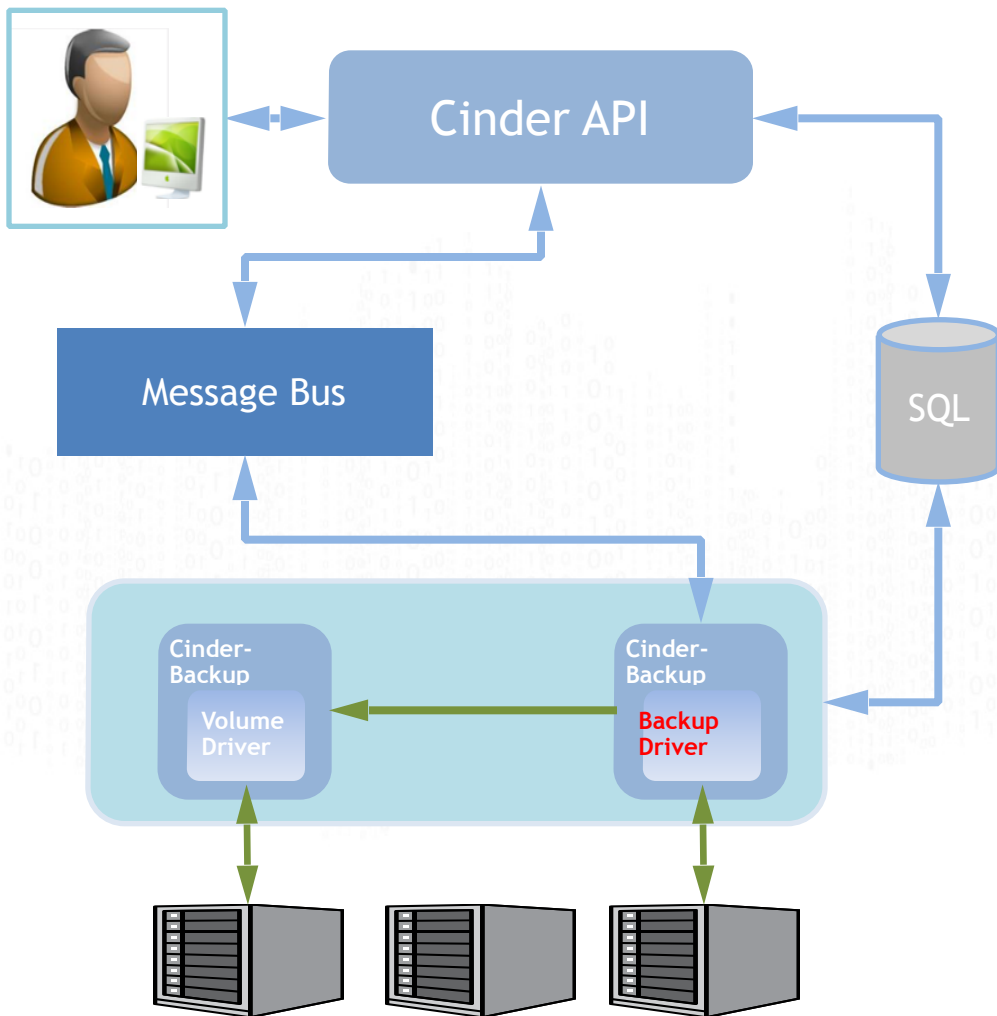


Swift

OpenStack各种备份中官方推荐的方案首选存储后端。



卷备份与恢复——Cinder



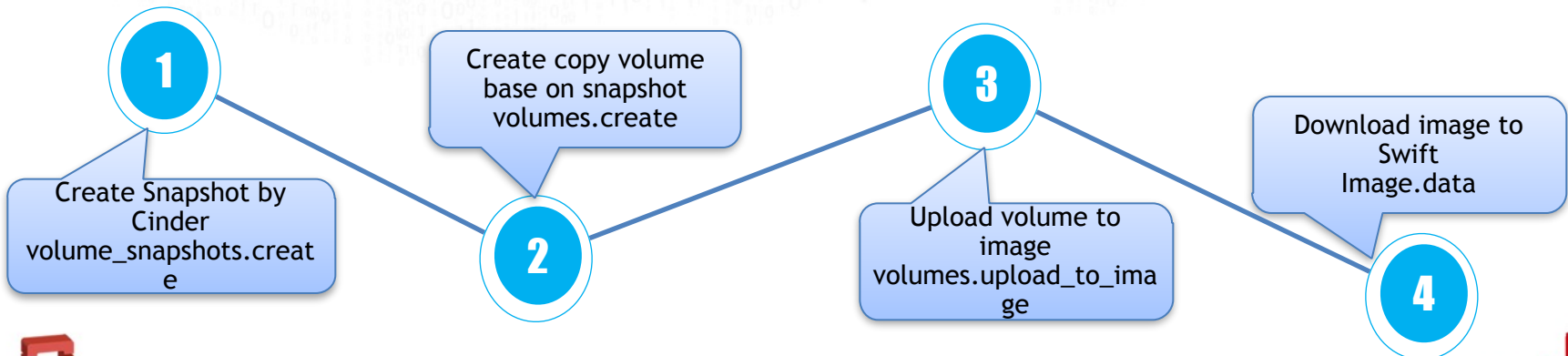
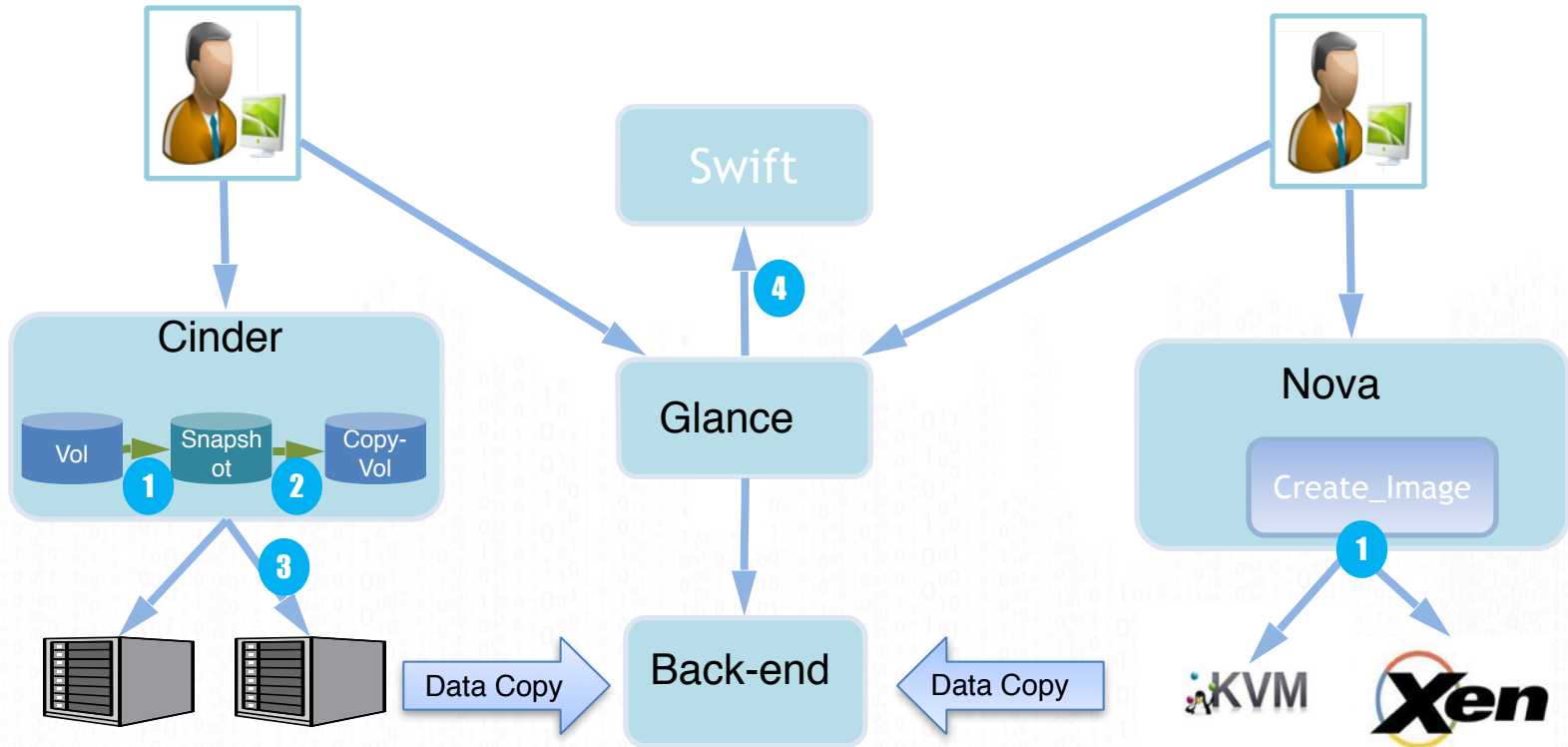
Backup

- ✓ Create Backup
- ✓ List Backups
- ✓ Show Backup Details
- ✓ Delete Backups
- ✓ Restore Backup
- ✓ Force-Delete Backup
- ✓ Show back-end Capabilities

通过后端（Swift, Ceph。。。）提供基础备份能力



备份与恢复—Glance + Cinder/Nova

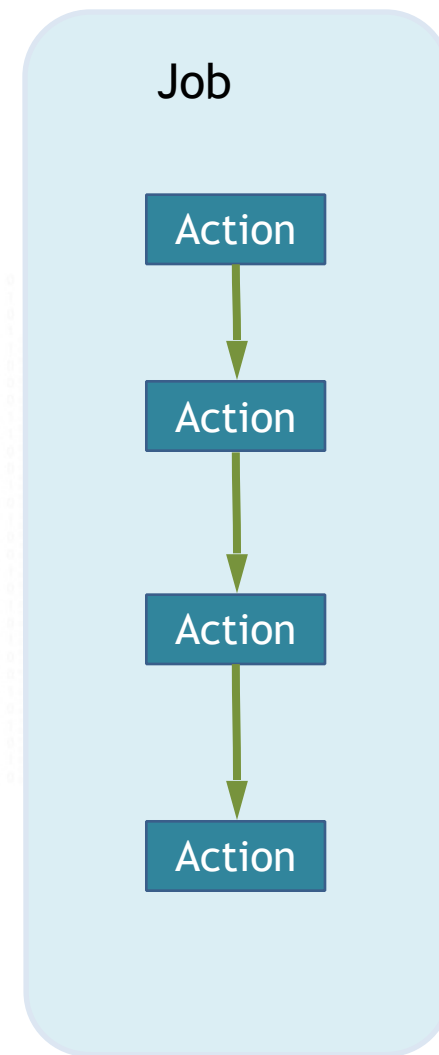
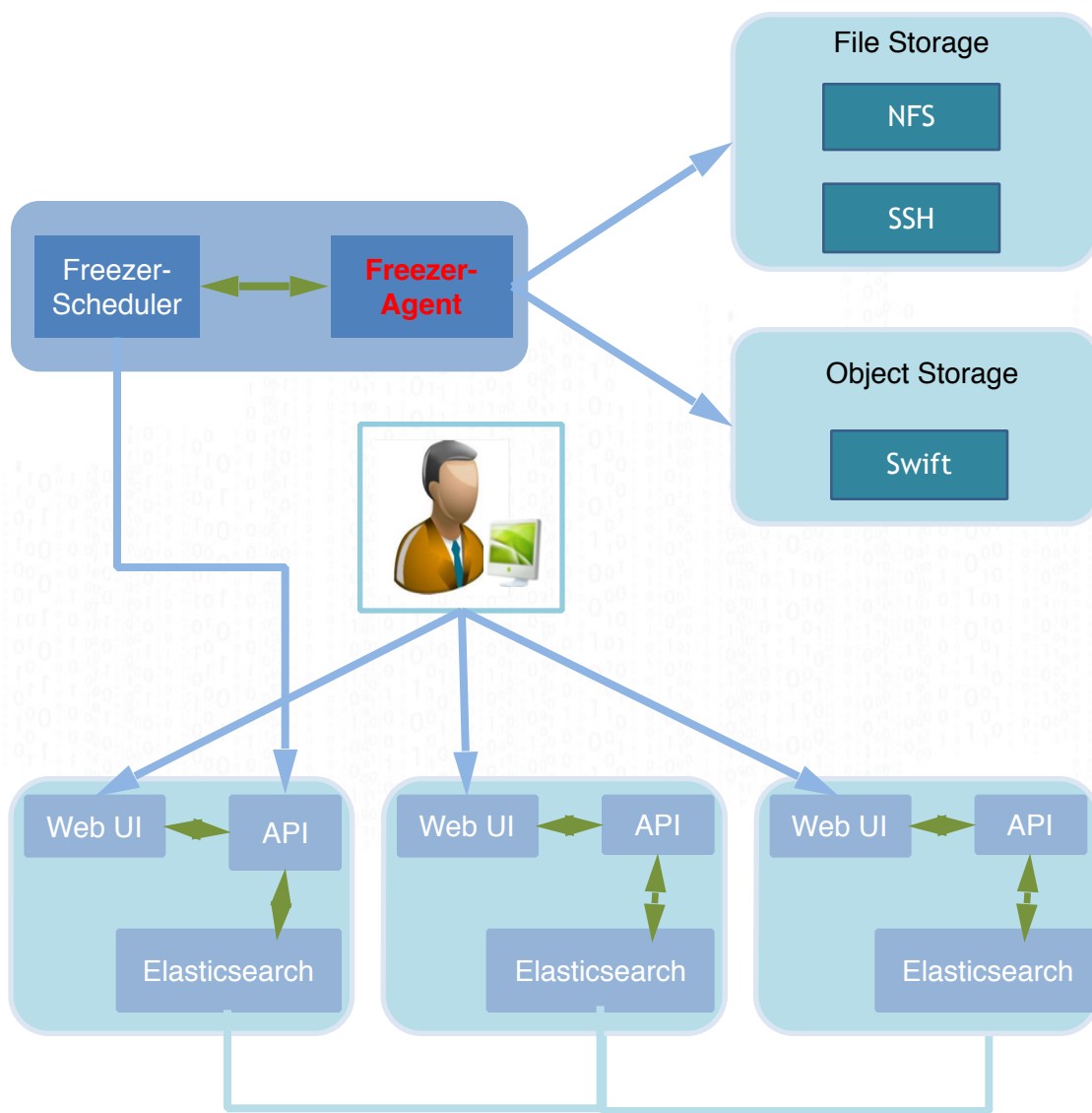


文件备份与恢复——Manila

Coming soon



集成型备份与恢复——Freezer



Smaug Highlights



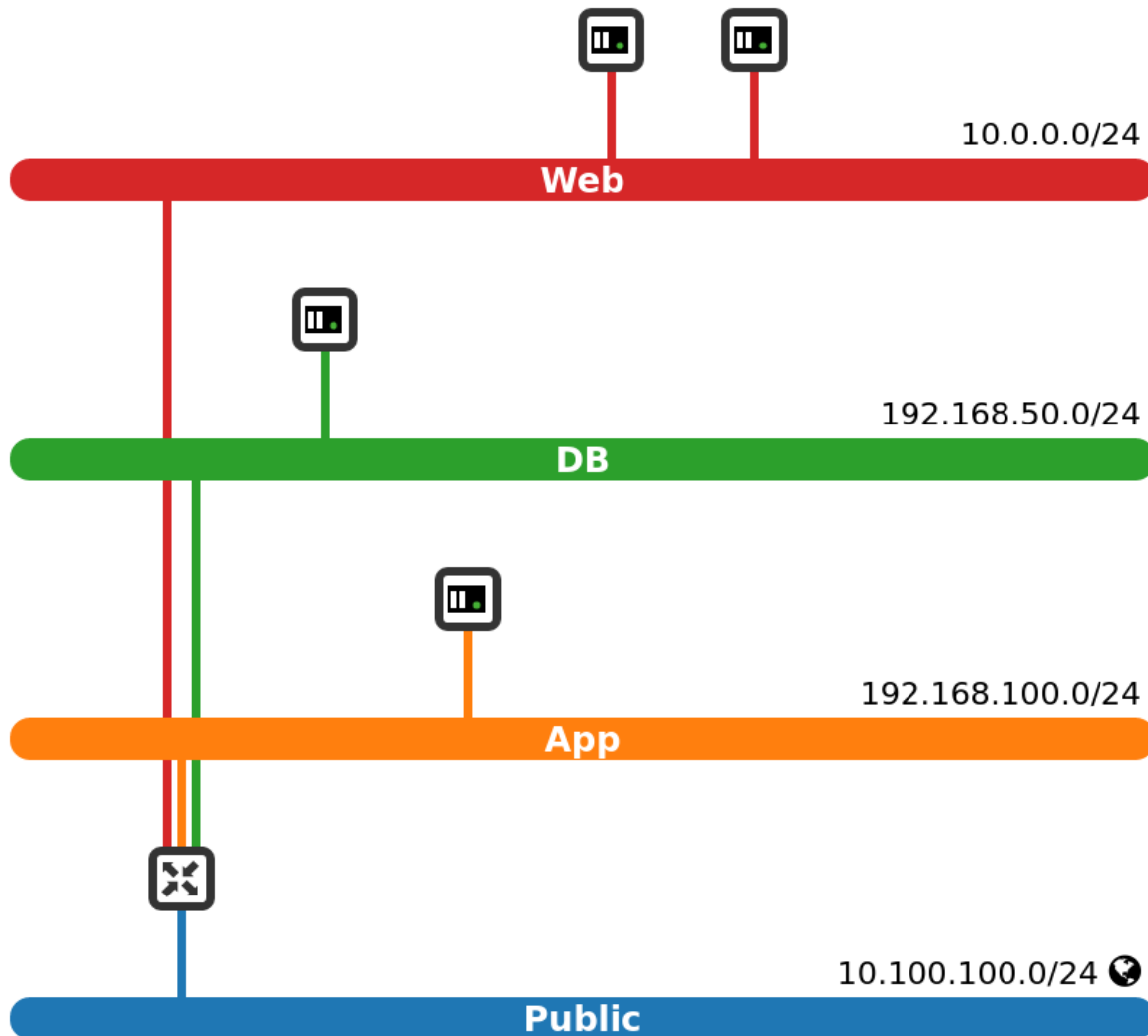
Protect **any** OpenStack resource, as a Service

Pluggable: what, where, and how to protect

Flexible: different protections for different use-cases

Open architecture: support **diverse** vendor solutions

Typical 3-tier Application



Smaug



Tenant

Smaug API

Protection Plan A



Volume backup

Image backup

Object storage

Protection Plan B



Volume replication

Image replication

Object storage

Protection Plan C



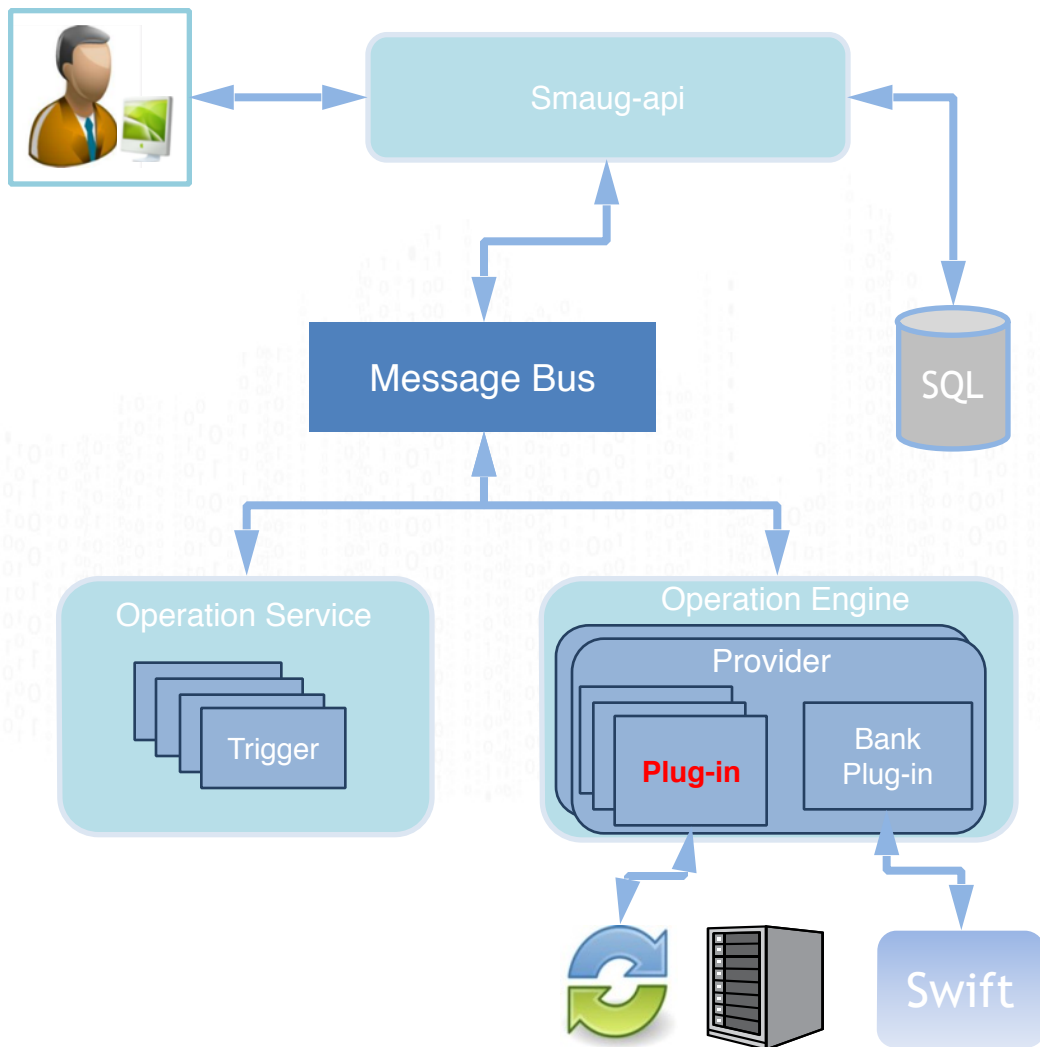
Volume backup off-premise

Image backup off-premise

Object storage off-premise



Backup and Restore—Smaug

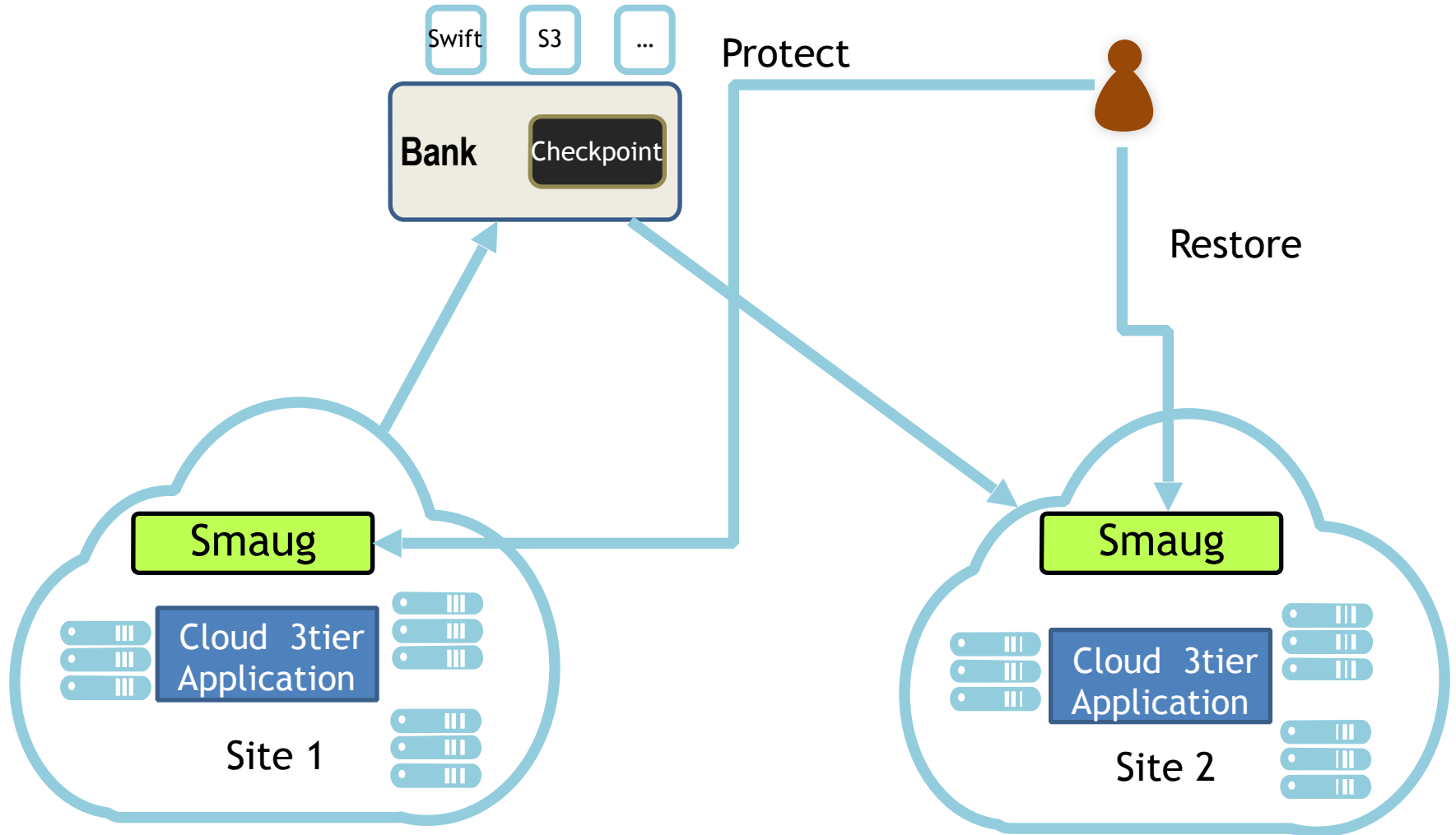


Backup

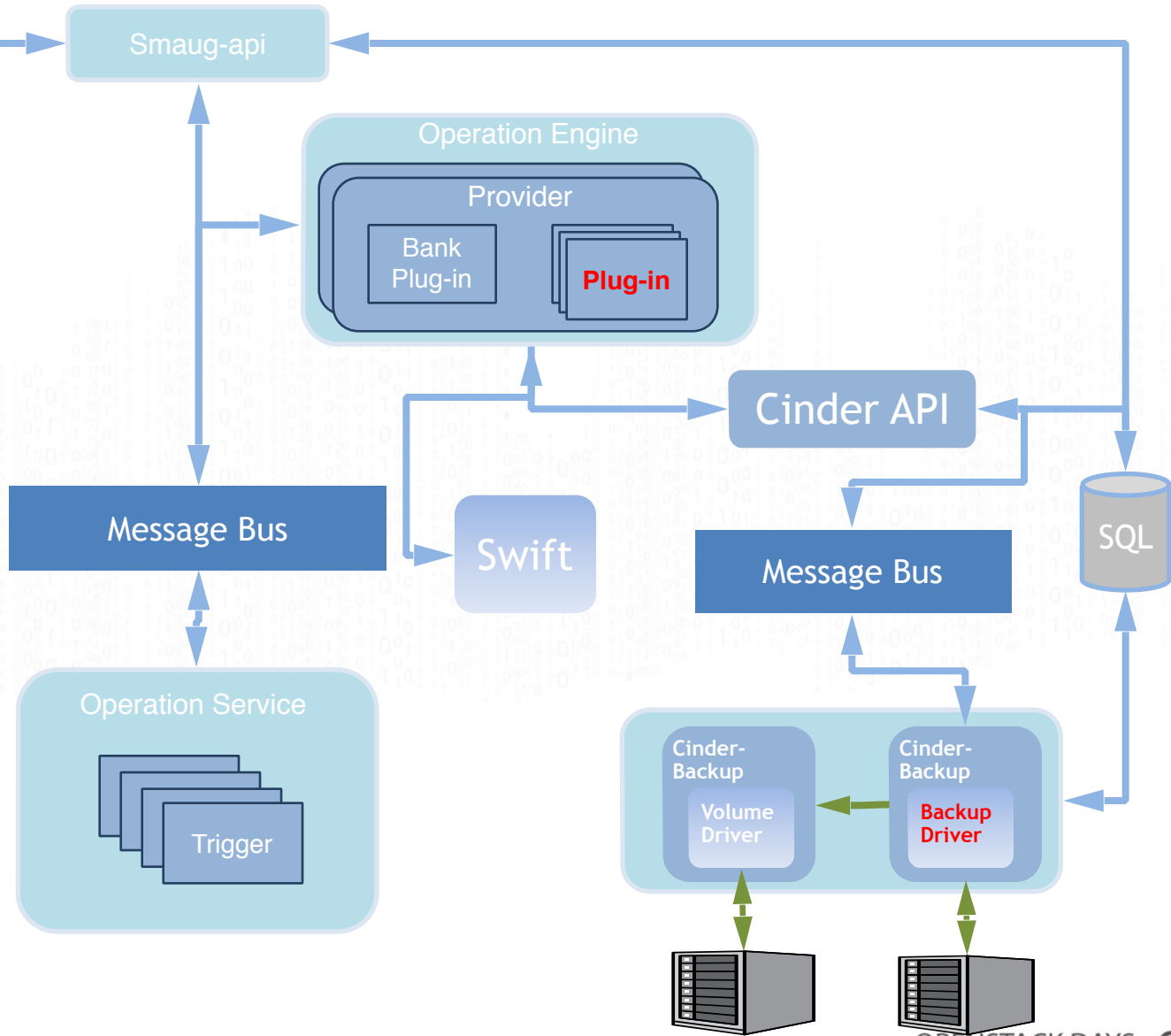
- ✓ Policy.
- ✓ Tenant.
- ✓ support Siwft、Cinder、Glance bank
- ✓ used other OpenStack Services



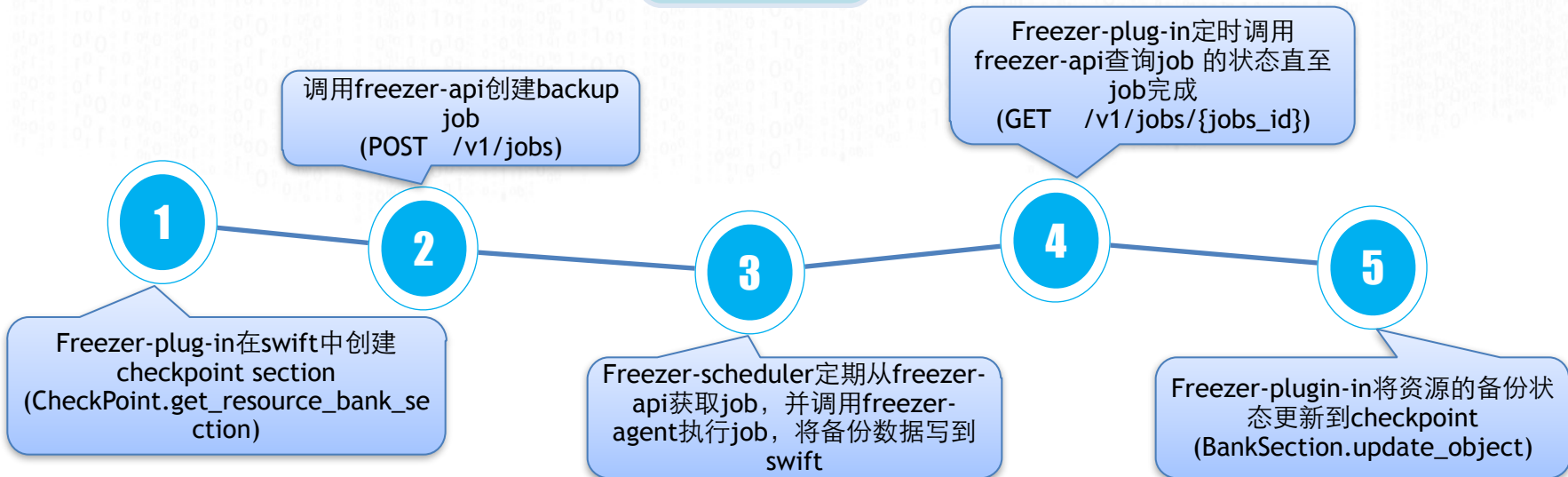
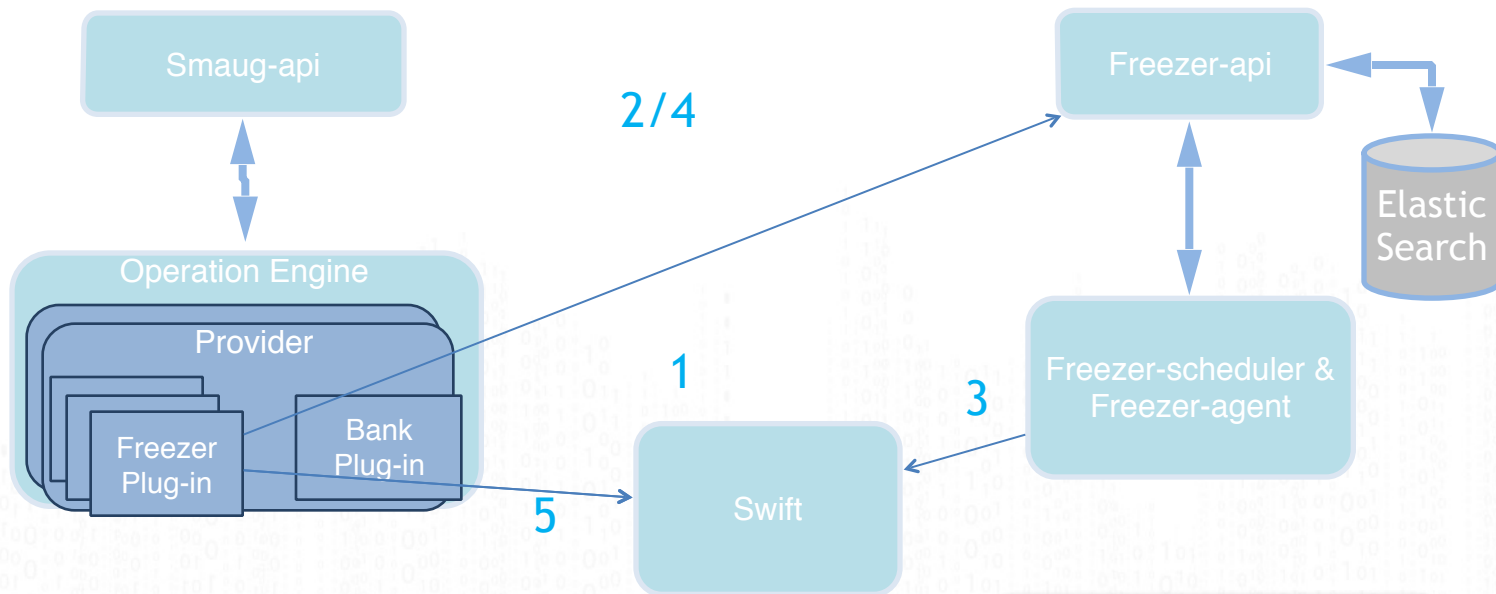
CrossSite Backup and Restore



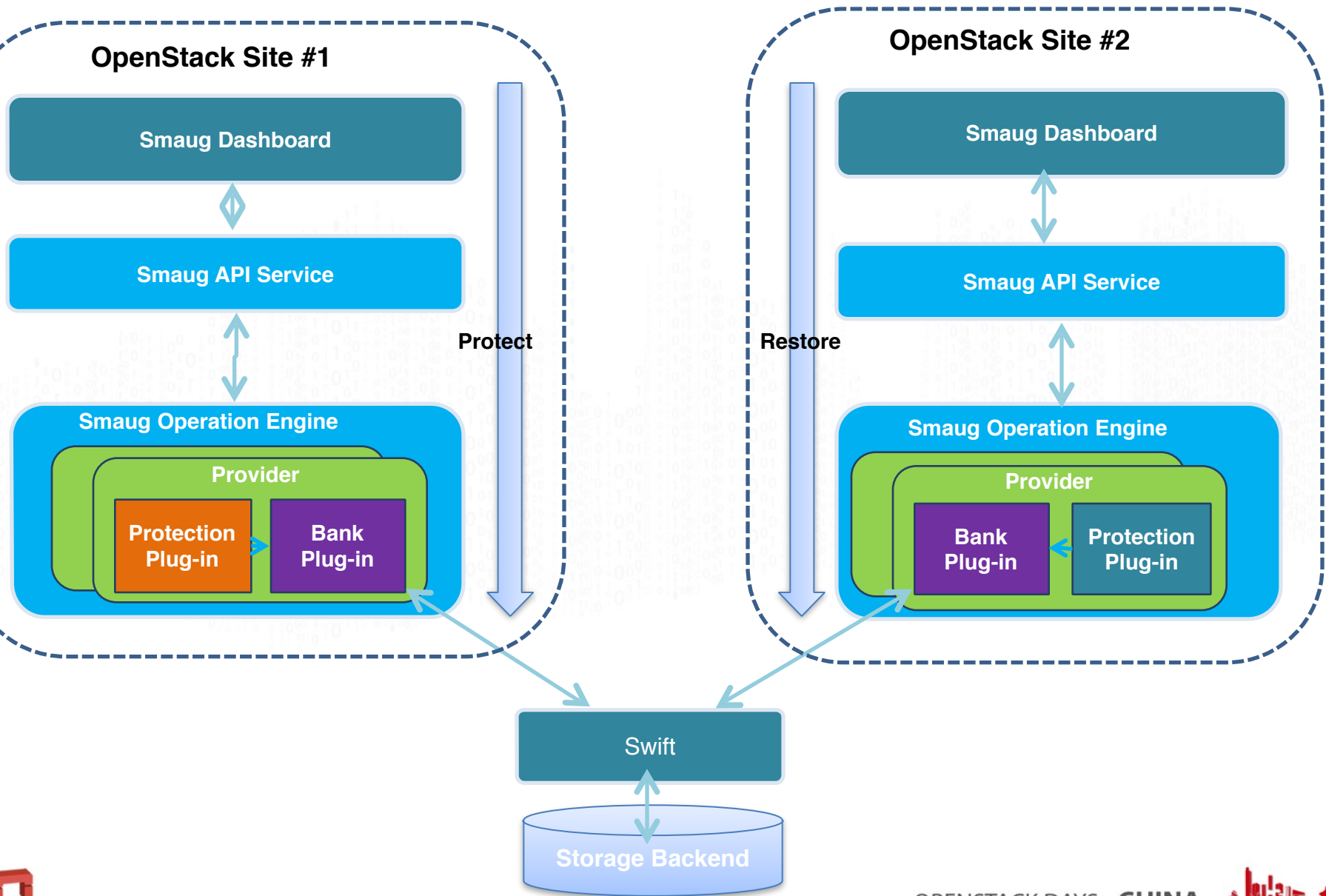
单站点备份与恢复——Smaug + Cinder



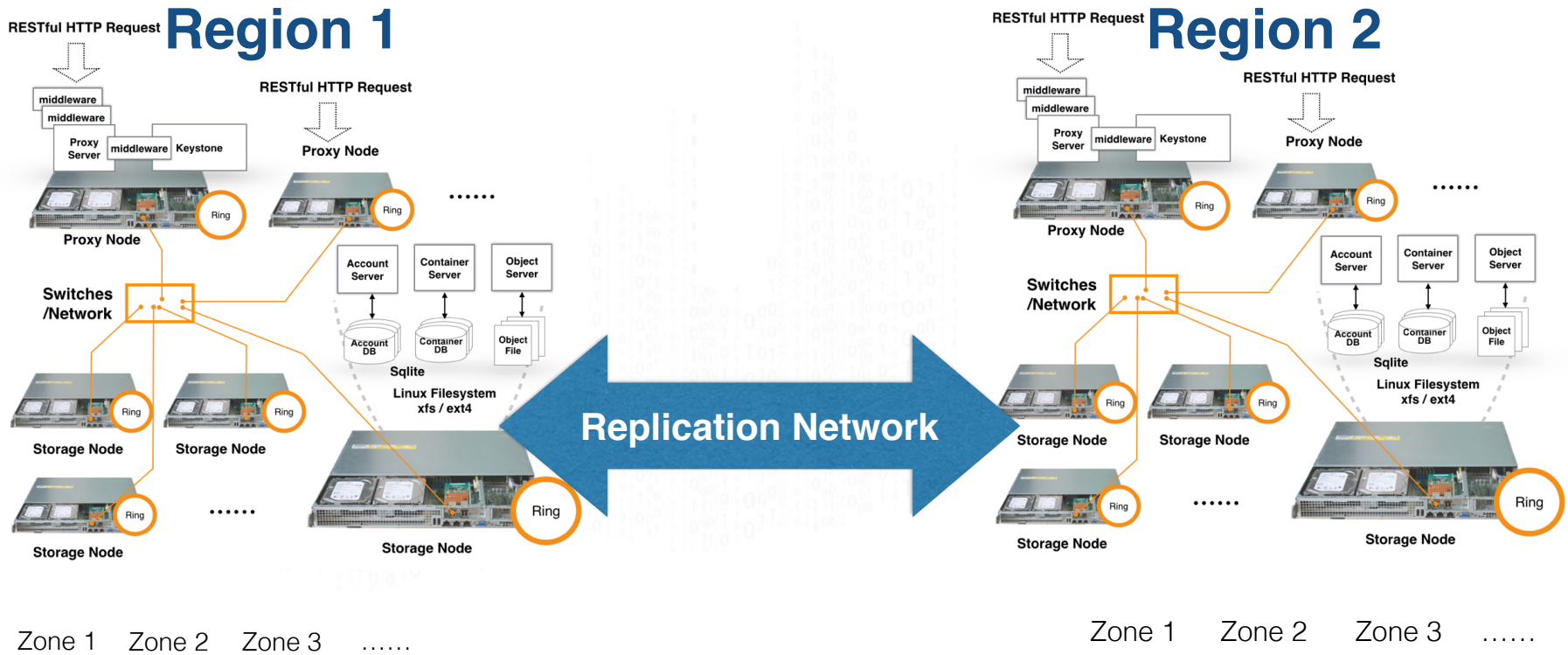
文件&应用备份与恢复——Smaug + Freezer



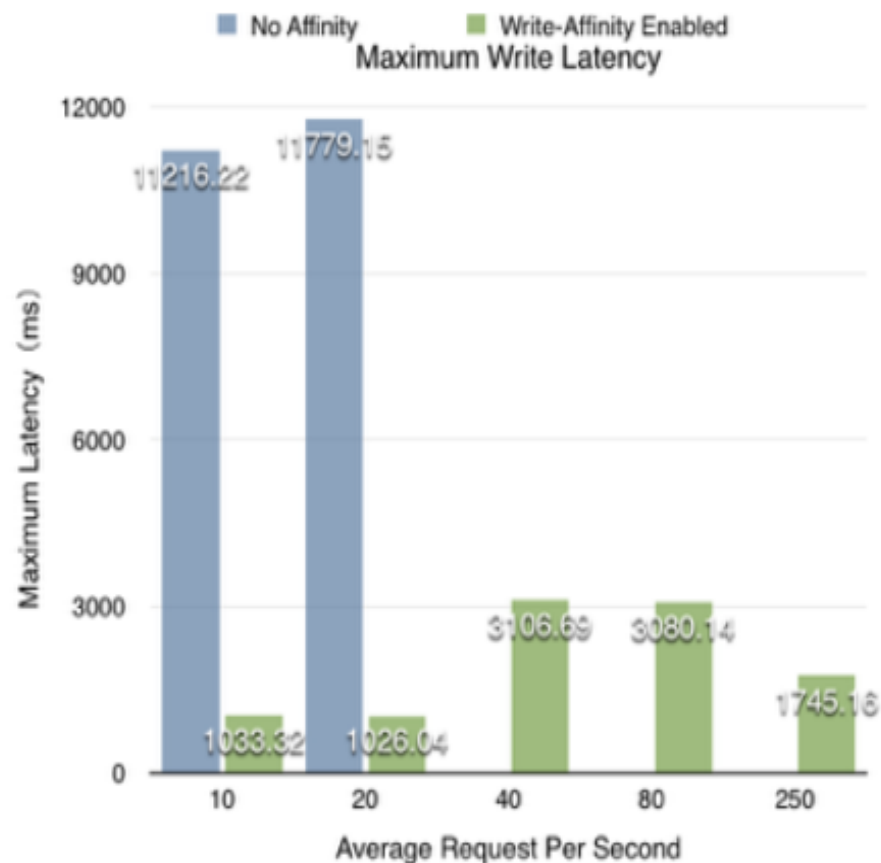
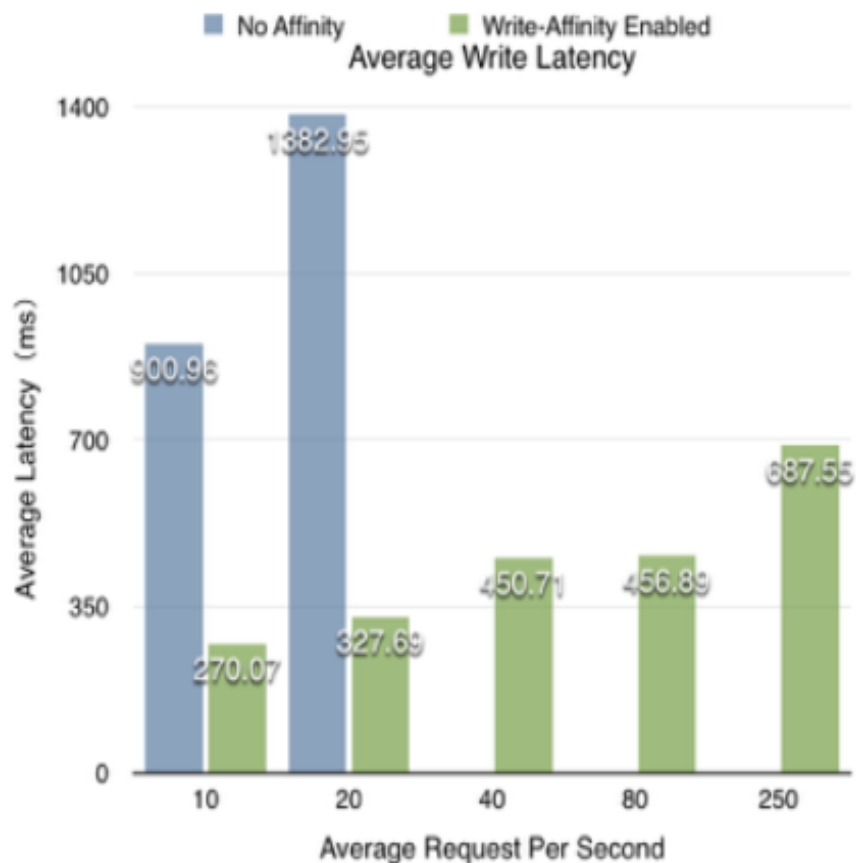
跨站点备份与恢复——Smaug + Swift

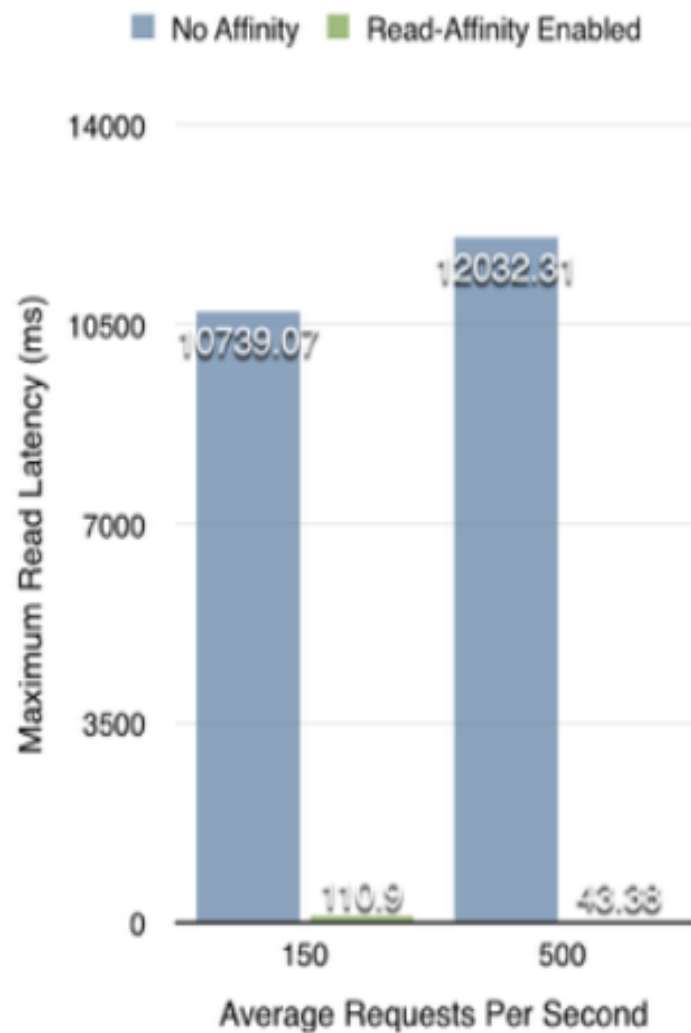
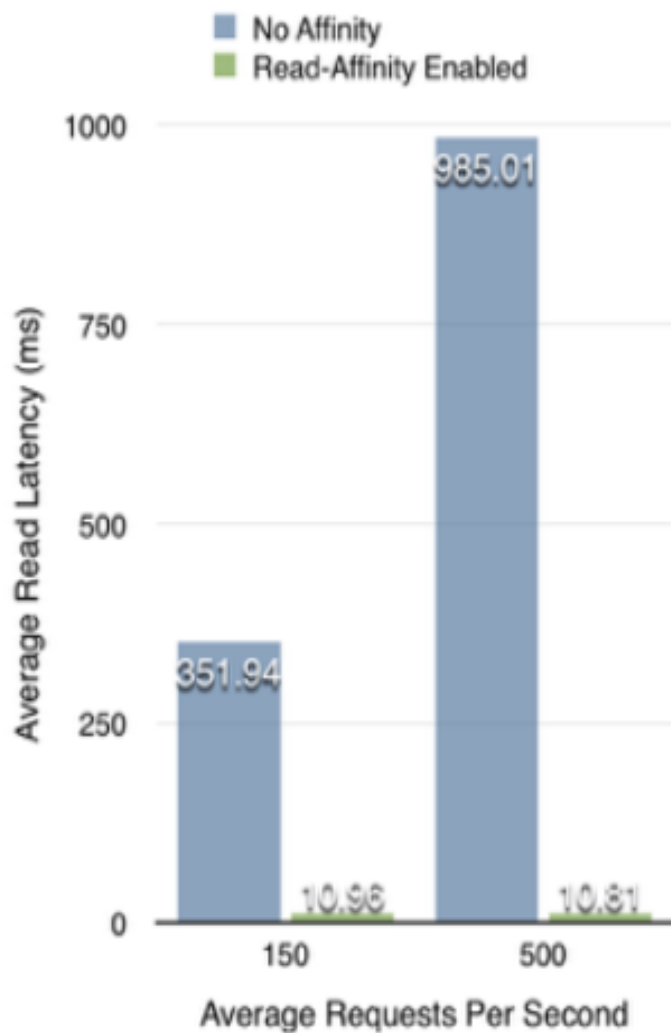


Multi-Region Cluster

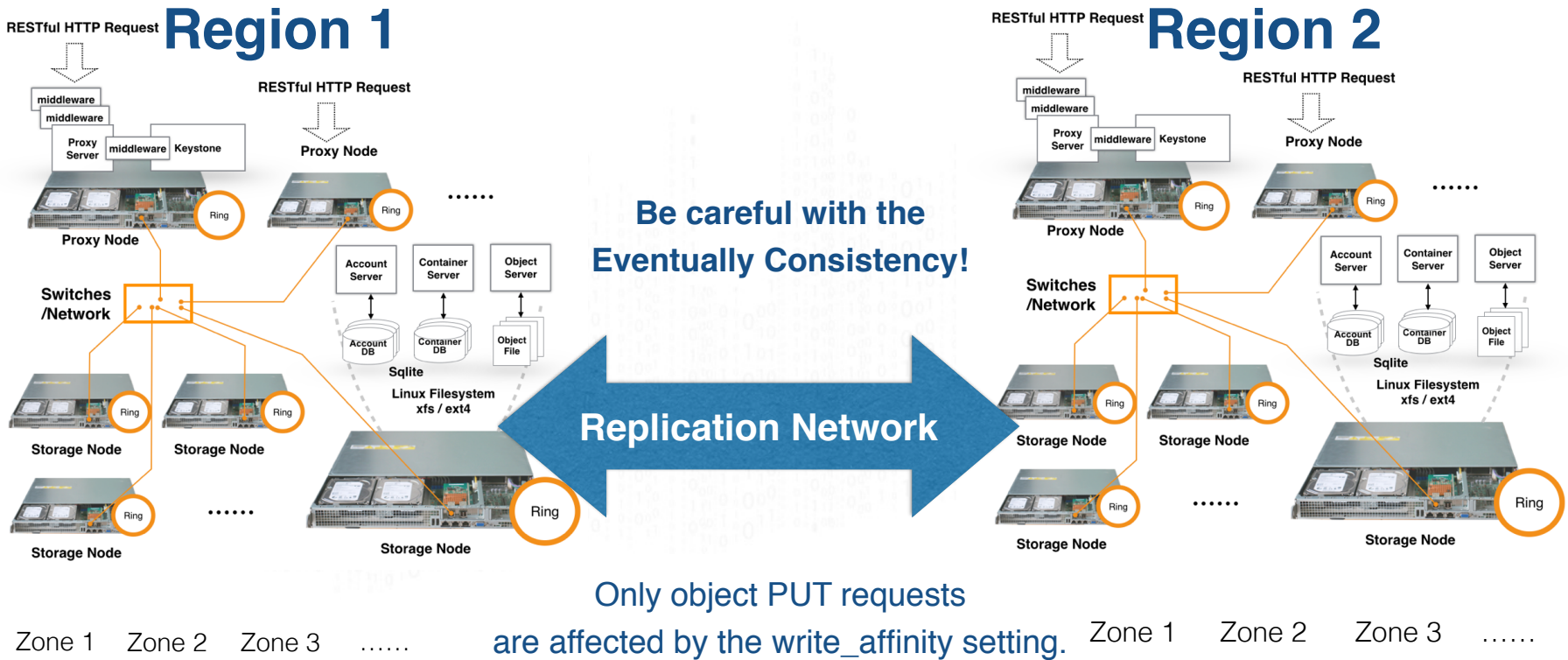


Experimental Results





Multi-Region Cluster



Swift Large Object Support

http://docs.openstack.org/developer/swift/overview_large_objects.html





openstack.org/wiki/Smaug

launchpad.net/smaug



Thanks