Facilitating the Open Source Community Transition to Cloud Storage

Giorgio Regni & Brad King
gr@scality.com, bk@scality.com
Who is Scality?

- Infrastructure Software
- Experienced Team – ex Bizanga
- Service Provider and Email Heritage
- Disruptive Technology (patent awarded)
- Offices in USA, EMEA, Japan
- 300 TB deployed, 1.5 million users
Less Buzzwords, More Facts!

The paradigm shift: distributed, cloud, object based, scale-out, SaaS, RESTful… Yeah right! Jargon much! Nevertheless, here are the undisputed facts:

- Storage is growing fast! 2x worldwide every 2 years
- Unstructured is growing faster than structured data
- HD size/speed ratio is getting worse
- Amazon S3 is meeting a need (over 100B object)
- Global Namespaces & Utility storage make sense
- Most applications were designed for block storage
Public cloud storage today

- Amazon dominates the market
- The model is appealing
- S3 protocol is becoming a standard
  - Ubuntu One cloud
  - Google Storage
  - Scality software (yes, that’s us)
- There is a lot of work to be done on existing applications
COMMON CHALLENGES?
Top Concerns Study by Forbes

FIGURE 13: What are the top concerns you might have about implementing a public cloud computing solution at your organization?

- Security: 75%
- Control: 50%
- Integration with legacy systems: 35%
- Reliability: 33%
- Lack of internal/staff expertise: 20%
- Disaster recovery: 20%
- Too few best practices to emulate: 15%
- Scarcity of proven suppliers: 12%

What does a cloud user want?

VISIBILITY

FREEDOM

PERFORMANCE

SECURITY
Freedom

- Cloud service provider
  - Being able to migrate
  - Not being locked
- Application interoperability
  - Split large files?
  - Standard encryption policies?
  - Standard compression settings?
  - Can I get my files using a different app?
Metrics

- How much did I upload?
- How many requests?
- How much is this going to cost?
Performance

- Clients & apps designed for “far away” cloud
- Focus on write once read many access
  - Web facing content
  - Backups
Security

- Client-side Encryption
  - Transparent encryption using AES
  - Private key scheme
- SSL connection
SCALITY DROPLETS LIBRARY
Clouds are made of droplets

- Portable C API with bindings for PERL, Python, Ruby & more
Features

Interoperability
- File abstraction layer
  - Path encoding
  - Splitting large files
- Custom domains
  - Address any S3 compatible cloud server
  - Easily migrate data between clouds

Performance
- Transparent compression
- Local caching
  - Using any local volume as read and/or write cache
Droplets User benefits

- Visibility
- Freedom
- Performance
- Security

- Usage Stats
- Cloud Storage Provider
- Application Metadata Compatibility
- Compression
- Caching
- Network Stack
- Client-side encryption
- SSL
Part 3

SCOP
What’s SCOP?

Scality Open source Program – Goals

- Promote the object store model & promote a popular interface model
- Improve interoperability of applications and cloud storage services
- Create a canonical set of API features with the help of the Open Source community
- Jump-start existing applications with a Bounty Program
SCOP Bounty Program

- Propose your talent
- Your proposal is selected…
- Integrate the app using Droplets
- Collect a Bounty!
The SCOP Bounties

- Cloud migration tool $XX
- Web server CDN $YY
- Zope/Plone integration $ZZ
- …
- Your proposed Application
Participating in SCOP

- Download Scality Droplets from http://github.com/scality/Droplets
- Download the application form at http://scop.scality.com
- Applications due by November 1st 2010
- Acceptance Notifications by December 1st 2010
- Code your application
- Bounties awarded on functional completion
Q & A