

Introduction to Yale Spinup and Cloud Computing

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Yale

 Wright
Laboratory

Key Traits of Cloud Computing¹

- Self-provisioning
- Shared
- Elastic/Ephemeral
- Accessible
- Metered

1. Peter Mell; Timothy Grance (September 2011). The NIST Definition of Cloud Computing (Technical report). National Institute of Standards and Technology: U.S. Department of Commerce.

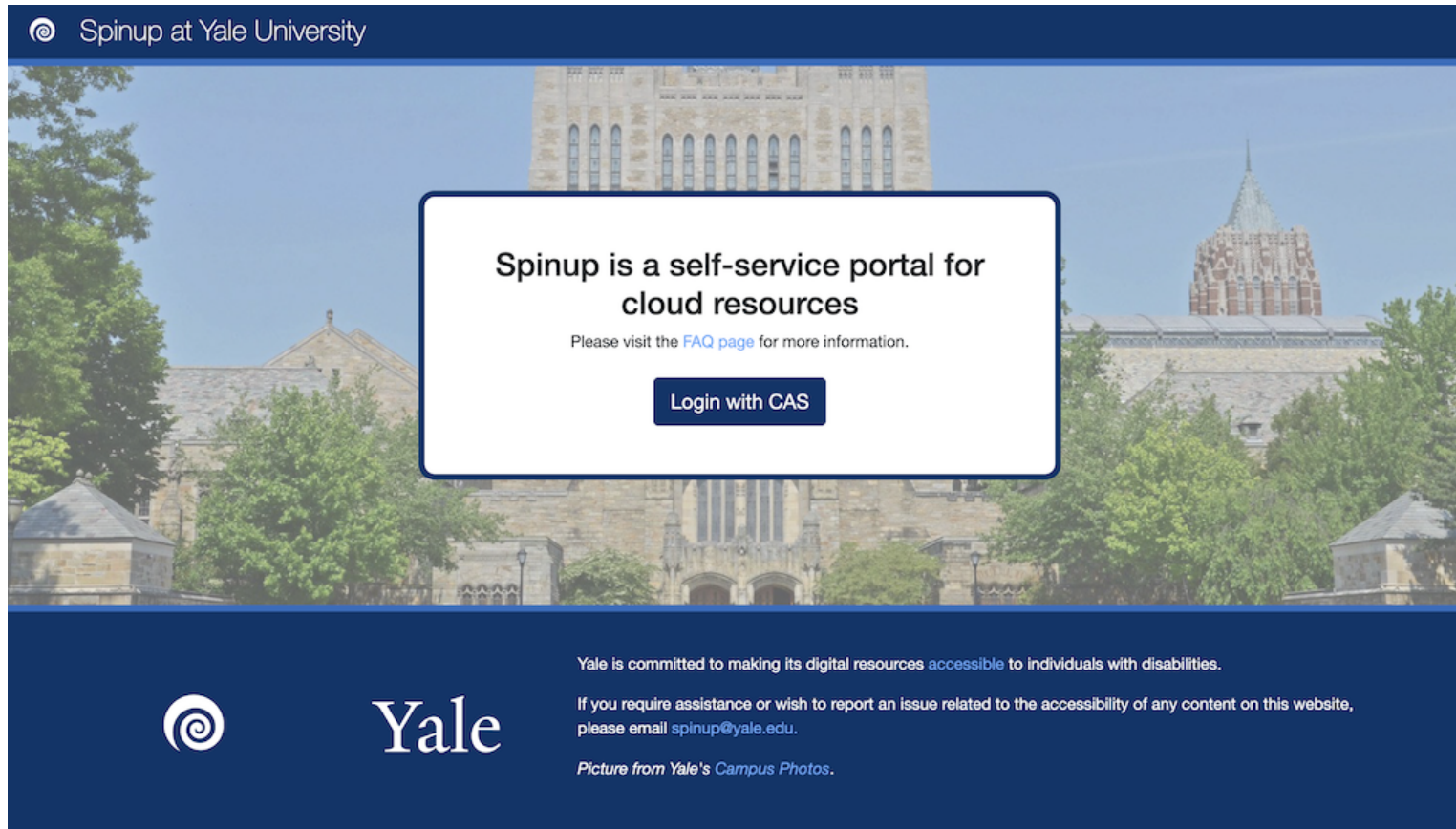
Implementation

- Identity and role-based access controls
- Policy
- Automated provisioning and configuration of workloads
- Wide area networks
- Service instrumentation

Yale Spinup

- Application layer over a shared AWS account
- Yale governance
 - CAS/Shibboleth identity
 - Enterprise and business agreement with Amazon
 - Automated creation and configuration adhering to institutional standards
 - Shared responsibility
- Enables self-service

Demonstration Spinup Web Application



Infrastructure as a Service (IaaS): Server Instances

- Virtual servers hosted in Amazon EC2
- Cost directly proportional to provisioned resource
- Only charged for uptime and storage
- Regular snapshots

Demonstration: Spinup EC2 Instances

Platform as a Service (PaaS): Databases

- Provisioned to clustered database environment or to a fully managed instance
- Backups fully managed
- No need for patching
- Support for common databases

Demonstration: Spinup Database Services

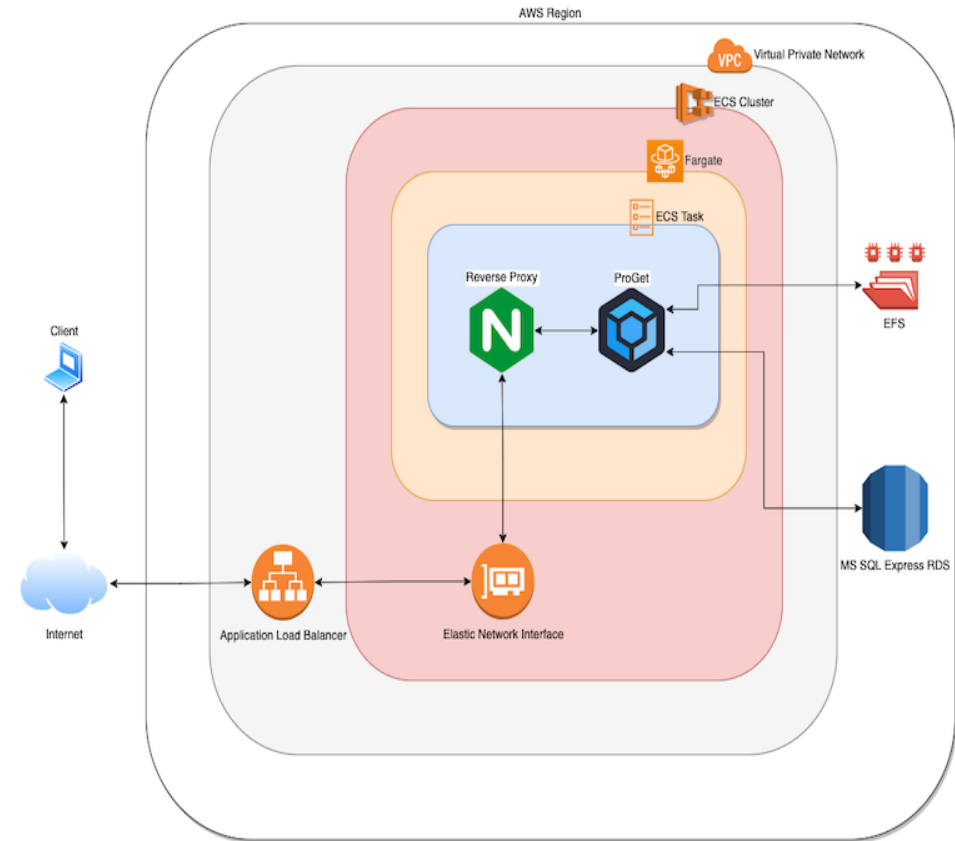
Storage

- S3 object storage
- NFS volumes through Amazon Elastic File System (EFS)
- Static websites

Demonstration: Spinup Storage Services

Containers

- Isolation of application from host
- All dependencies encapsulated
- Achieve greater density and utilization
- Drawbacks
 - Complicated infrastructure
 - Orchestration of interrelated services
 - Stateless



Demonstration: Spinup Container Services

Conclusion

- Constitutes an ideal environment to learn cloud computing.
- Provides convenient and secured access to the AWS cloud.
- Provides a stepping-off point for the other clouds that Yale offers

Resources

- [Yale Spinup Selfservice FAQ](#)
- **#spinup** channel in [Yale University Slack](#)