# A Fault Injection Framework for *Linux-based* Cloud Computing Systems

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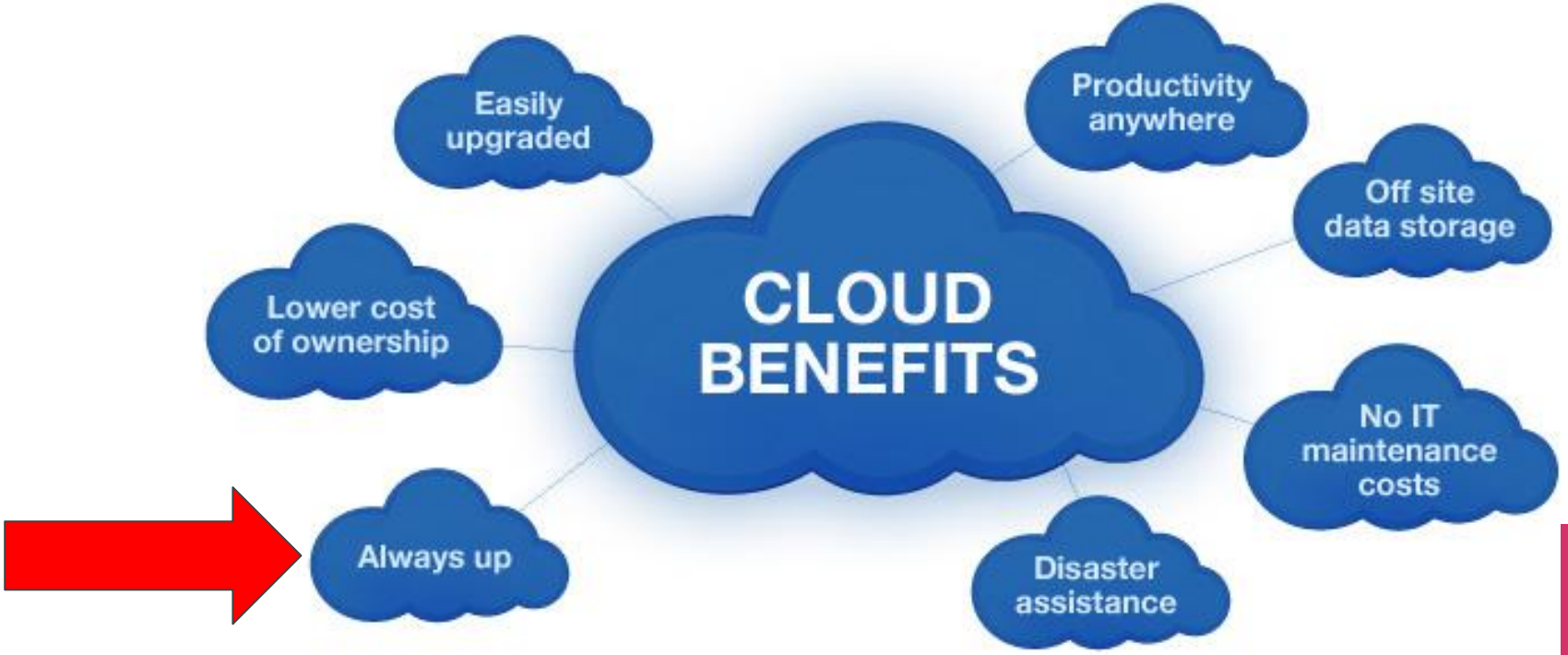
# Agenda

- Motivation
- Objective
- Fault Injection
- Eucalyptus
- Proposed Framework
  - Instance
  - Model

# Motivation

# Cloud Computing



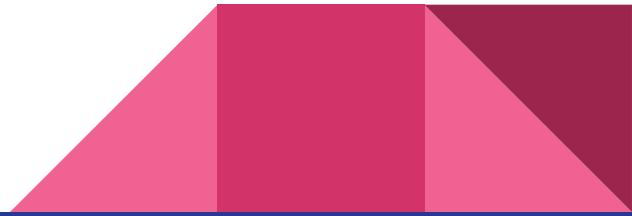
# SLA versus Availability

# Objective

# Objective

To develop an unified fault injection framework (for dependability analysis)

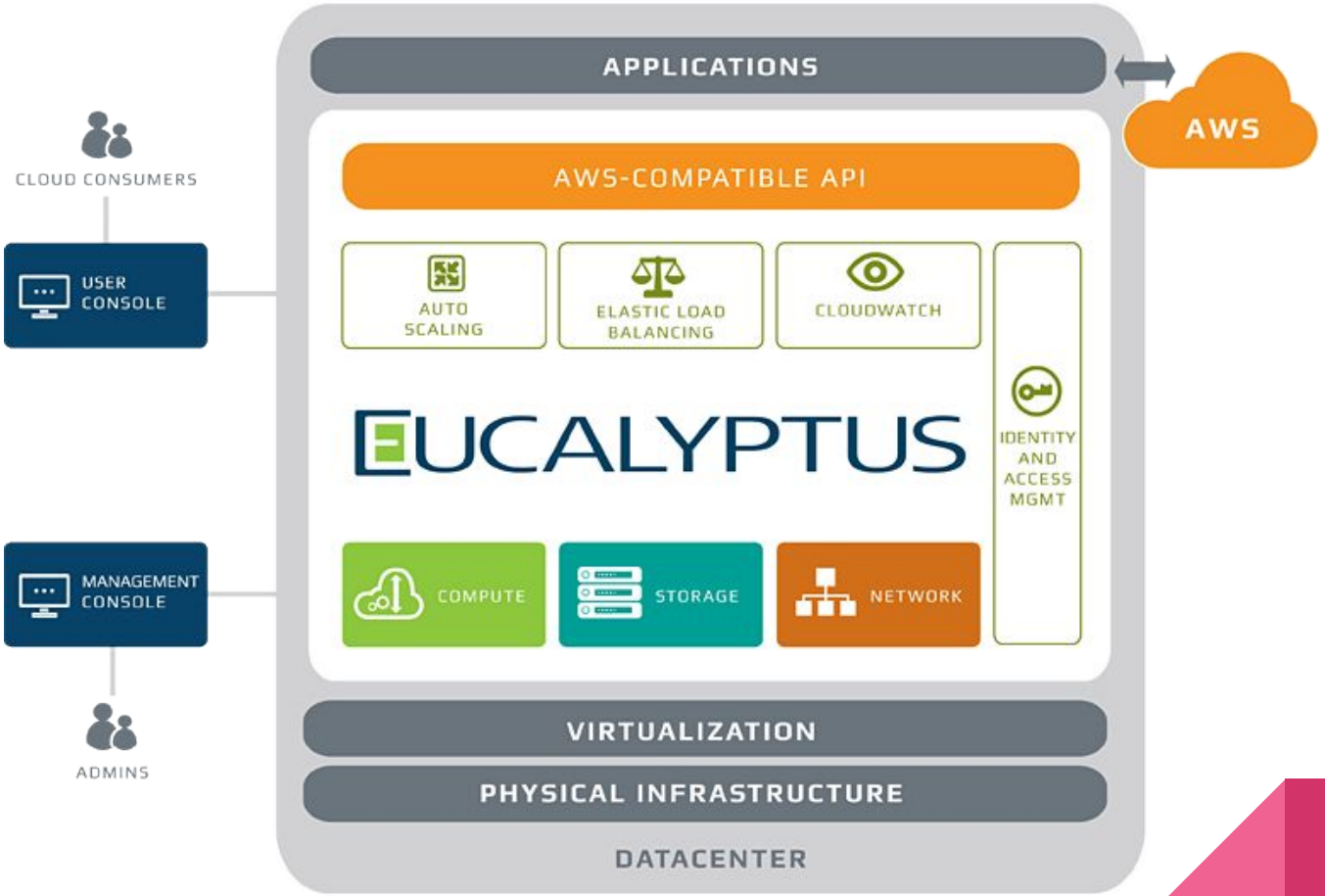
- To be applied on Linux Based-Cloud Computing Systems ( IaaS Providers )
- Capable of injecting, repairing and monitoring faults
- To provide a scalable and easy to use infrastructure



# Cloud Computing Platforms

There are different platforms to *instantiate* the proposed framework.

# Eucalyptus


APPLICATIONS
AWS
CLOUD CONSUMERS
AWS-COMPATIBLE API
USER CONSOLE
AUTO SCALING
ELASTIC LOAD BALANCING
CLOUDWATCH
EUCALYPTUS
IDENTITY AND ACCESS MGMT
MANAGEMENT CONSOLE
COMPUTE
STORAGE
NETWORK
ADMINS
VIRTUALIZATION
PHYSICAL INFRASTRUCTURE
DATACENTER

# Fault Injection

# Software Implemented Fault Injection

SWIFI techniques can be categorized into two types:

- Compile-time injection
- Runtime Injection 

# Framework

# Framework

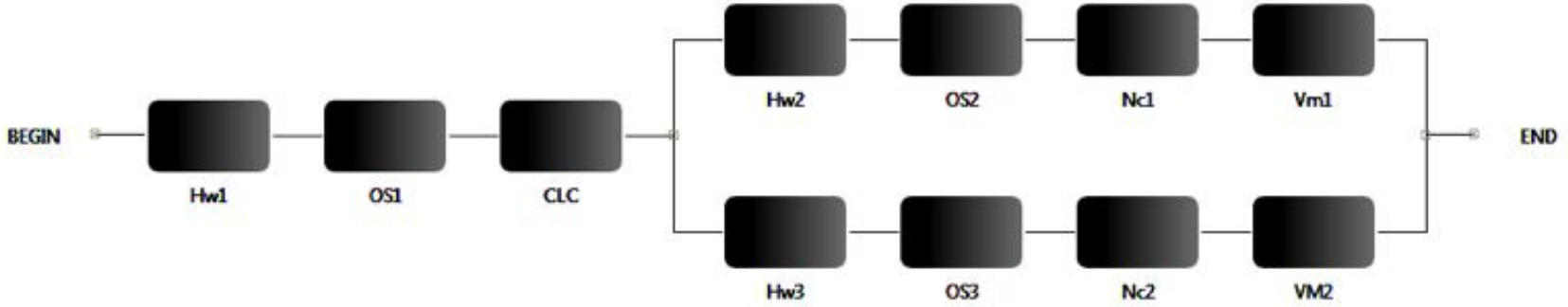
- JAVA
- Well documented source
- Monitoring using SysStat (able to install via SSH on RHEL/DEB)

# Framework

- No need to deal with Threads
- Components { start(), stop(), isAlive() }
- Random Time generation ( EXPONENTIAL, ERLANG, NORMAL, PARETO, GEOMETRIC, LOGNORMAL, POISSON, TRIANGULAR, WEIBULL, UNIFORM)

# Model

# RBD

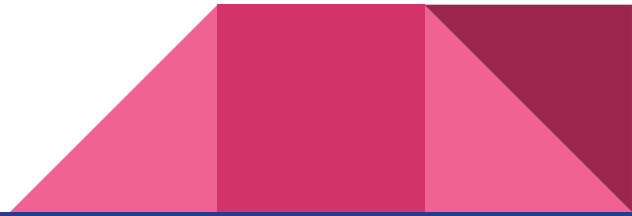


# Experiment

TOOL -> To obtain the CI of the availability ( x , y )

MODEL -> Calculate the availability

check if we cannot disprove the model



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