

# Cloud Testing– Yet Another Testing



# **Cloud – Is that a big deal for Software Testing?**

- Introduce Cloud Testing
- Brief Introduction of Cloud Computing
- Details of Cloud Testing
  - FAQ's
  - Who should know about it?
  - Current software landscape
  - How to test it using Cloud Testing?
  - Types of Cloud testing
  - Benefits, Challenges, Best Practices and Opportunities

• Q&A

# Cloud Testing - Introduction

- **What is Cloud Testing ?**
  - Yet another catchy jargon! 😊
  - In one line : It is Software Testing done using Cloud Computing
- **What Cloud Testing is not:**
  - It is not testing 'The Cloud'.
  - You don't have to sit in Cloud and do the testing.
  - It is not just about testing the applications deployed in Cloud.
- **Why? What is the need?**
  - Some problems are solved
    - Business and Testing problems
  - It provides advantage
  - Fits in budget or may be saves money
  - Earn Money : it's a growing business area
  - Why not?

# Tell me what is Cloud Computing

- Definition :
  - is not important and difficult ☹
- So what is Cloud Computing?
  - Cloud computing is a marketing term to give computation, software, data access, and storage services over the network
  - User does not have to know the physical location, configuration about the system which is delivering the service
  - The name Cloud Computing could have been inspired by the Cloud symbol that's often used to represent the Internet in flowcharts and diagrams

# Cloud Computing - Important Facts

- On-demand access
- Scalability and Elasticity
- Cost Reduction
- Minimum management effort
- Device or location independence

## Important Characteristics

- Public Cloud
- Private Cloud
- Hybrid Cloud
- Community Cloud

## Deployment models

- SaaS - Software
- PaaS - Platform
- IaaS - Infrastructure

## Service Models

# Cloud Testing

- **FAQ's from Testers and enthusiasts -**
  - ✓ Does it change the fundamentals of software testing?
  - ✓ Do I have to learn something NEW?
  - ✓ Is it difficult to understand and learn?
  - ✓ Do I have to know scripting or automation?
  - ✓ What domain or technology it applies to?
  - ✓ Our application does not have any connection with Cloud, still do I have to know it?
  - ✓ What is the first step I should do? Where to start?
  - ✓ Are there any readymade courses available?
  - ✓ Do I have to pass any certification?
  - ✓ Is there any certification available?
  - ✓ Does it add value to my resume?



# Cloud Testing is important to who?

- **Who is affected and should be knowing about Cloud Testing?**

1. Automation - Engineer/Team?
2. Manual – Engineer/Team?
3. Experienced team members, Juniors or fresher?
4. Process engineer?
5. Test Architect?
6. Test Manager and/or Project Manager?
7. Senior Management and/or Product Management?
8. Marketing and Sales team?
9. CxO's?
10. Customers?



**All of You!**



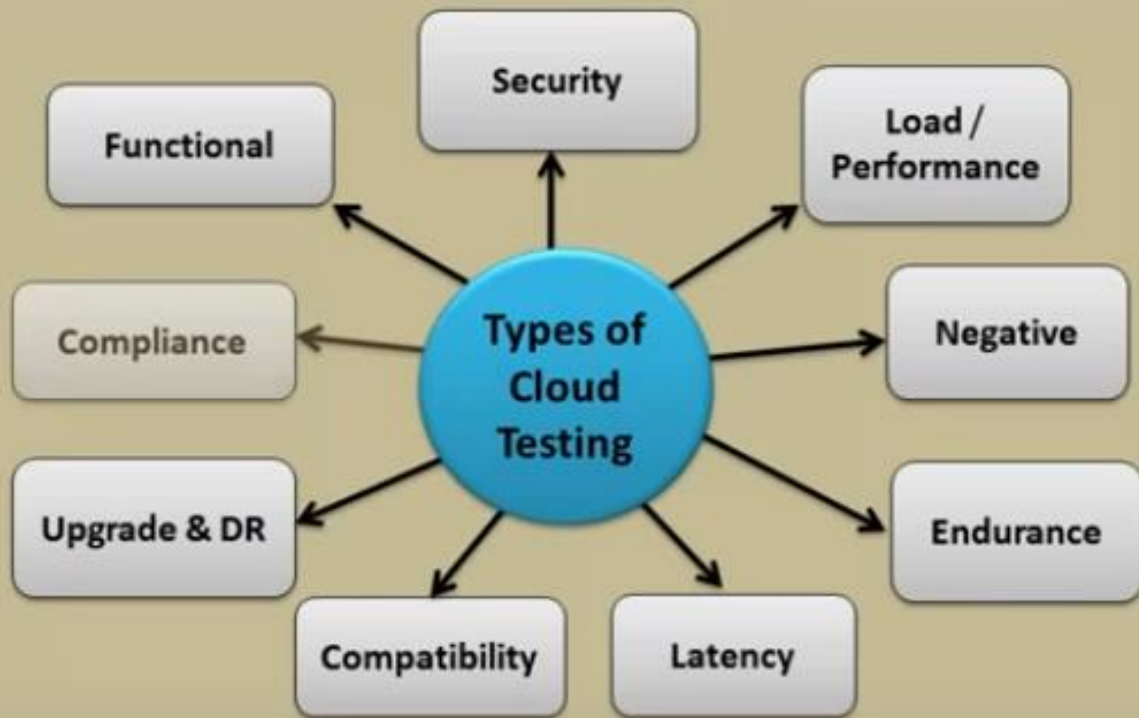
# Current Software Landscape

- **Different deployments possibilities**
  - To be migrated and deployed in Cloud
  - Developed and deployed in Cloud
  - Developed and deployed In-house
  - Hybrid deployment / Shared deployment model
- **Utilizing services of Cloud?**
  - SaaS – itself will be hosted in Cloud
  - PaaS – Utilizing platform services of the Cloud
  - IaaS – Utilizing Infrastructure services of the Cloud
- **Important characteristics or considerations w.r.t Cloud**
  - Multi-tenancy, Self-healing, Security, Compliance, Licensing, High Performance, on-demand access, scalability, elasticity, high availability, reliability, fast deployment, resource sharing etc.

# How to test them using Cloud Testing?

- Same way, the fundamentals of software testing do not change.
- There is no fundamental change required in the STLC
- Take out your knowledge of Quality Attributes, Test Planning, Test case writing, Requirement Traceability, Coverage Analysis, types of testing etc.... All of that apply as it is.
- Use automation and manual testing appropriately wherever needed.
- What changes is
  - What more or what less we test
  - How we test
  - Where we test
  - Allows us more options

# Cloud Testing Types



# Cloud Testing Types

## Functional

- Features and Functionality.
- Multi-Tenancy

## Load / Performance

- Response time, max load and other performance numbers.
- Scalability
- SLA's

## Security

- Data integrity
- Security standards

# Cloud Testing Types

## Compatibility

- Browser, Operating Systems, Software etc.
- Other environmental things

## Negative

- Self healing
- Test different layers

## Compliance

- Conformance to standards,
- Data handling, location, retention etc.

# Cloud Testing Types

## Upgrade and DR

- Patches, upgrades, maintenance
- Recovery procedure and efficiency

## Latency

- Application specific latency
- Latency because of different geographical zones

## Endurance

- Ensure high MTBF
- Memory Leak
- Error handling, recovery mechanism



# Benefits with Cloud Testing

- Reduction in capital expenditure
- Resources (Hardware, software, licenses, tools etc)
  - Assured availability and unlimited supply (theoretically)
  - Optimal utilization
  - Multiple options available without requiring long term commitment
- Pay-per-use model saves costs
- Fast and flexible deployment and provisioning
- Scalability and Elasticity
- Ideal for virtual teams and/or geographically dispersed teams
- Easy to indulge Testing-as-a-Service Model



# Challenges with Cloud Testing

- Cloud Computing and in turn Cloud Testing is evolving
- Dependency on internet [Connectivity, latency, bandwidth and availability]
- High initial setup or migration cost in some cases
- Lack of Standards
- Security (in public Cloud)
- Supportability of legacy systems
- Substantial Current investment in resources



























