Oakridge Infotech

TESTING ON CLOUD VS. TESTING CLOUD

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Businesses today require a fast, reliable and secure IT infrastructure to flourish. Small and medium enterprises are generally unable to meet the huge capital outlay that such an IT setup requires. Therefore, these organizations generally opt to migrate to the cloud, especially since it enables them to focus on their core activities, instead of worrying about maintaining their IT infrastructure.

Migrating to the cloud has its own set of challenges and risks such as data integrity, security, privacy, business acceptability, etc., which can be mitigated through adoption of additional procedures. To overcome such challenges, thorough testing of such applications becomes mandatory but traditional methods of testing on-premise software might not be able to do a stellar job.

VARIOUS TYPES OF TESTING REQUIRED FOR A CLOUD SETUP INCLUDE:

- Functional Testing
- System Integration Testing
- User Acceptance Testing (UAT)
- Security Testing
- Performance Testing
    - Load Testing
    - Stress Testing
    - Compatibility & Interoperability Testing Disaster Recovery Testing

Several other variables like multiple browser platforms and versions, operating systems and hardware further complicate the situation. It is evident that a 'one-size-fits-all' approach would not work in such a scenario, and may indeed prove to be a recipe for disaster. Rather, comprehensive Cloud Testing acquires prime importance that cannot be understated.

Cloud Testing is practiced in the industry in two ways:

One is to perform testing of the applications, which have migrated or are to be migrated to the cloud so as to ensure that their performance, security and reliability matches or exceeds expectations in view of the changing delivery methods (Testing on Cloud).

The other is to leverage the cloud-based hardware infrastructure and computing resources to perform traditional testing like performance, load, stress, security and compatibility testing for regular, on-premise applications (Testing Cloud).

Both approaches enjoy widespread popularity, and there are numerous vendors and service providers who provide these types of platforms and services to both consumers and organizations.

TESTING CLOUD

Cloud enablement of applications or hosting applications on the cloud is all at one end, but companies also need to understand the risks associated with it and adopt proper mitigation plans, the core of which is testing.

There are different kinds of cloud in the industry, based on what companies want on the cloud:

- Software as a service (SaaS)
- Platform as a service (PaaS)
- Infrastructure as a service (IaaS)

In addition, there is the concept of public cloud and private cloud. All these kinds of clouds need different types of testing as traditional testing is not sufficient in a cloud environment. Enterprises need to have a better understanding of the way different types of cloud work, how they impact business and which testing approaches should be used for them. They need to adopt an end-to-end testing approach, starting from requirements to deployment, because each stage has different testing requirements.

Oakridge Infotech cloud testing expertise focuses always on the following key imperatives that enable CIOs IT strategies think about transitioning to the cloud.

Security: The assessment of information security should include, at a minimum, data encryption, data storage location, segregation, risk management, user access, systems management, and incident response.

Privacy: Privacy can be assessed using the generally accepted privacy principles audit framework published by the American Institute of Certified Public Accountants. Organizations should also use the privacy guidance that is appropriate to their industry, such as the Health Insurance Portability Act.

Scalability: Scalability is assessed by due diligence on aspects such as load testing, stress testing and forecast growth.

Metering: Metering can be assessed by revenue-recognition testing as well as due diligence on the integrity and security of metering systems.

Availability: Availability can be measured by investigating resilience of the architectural components and reviews of data recovery and information retrieval aspects.

Data leakage: The likelihood of unauthorized disclosure of data can be examined by a risk assessment that specifically evaluates data-leakage vulnerabilities.

Functionality: At the first level system integration and user acceptance testing is carried out to ensure the developed cloud meets functional and business user needs
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Disaster Recovery: This is another important testing activity to ensure data recovery in case of hardware/infrastructure failures. In most cases since the applications are hosted on public clouds, companies must ensure data recovery due to emergencies
However, by leveraging cloud infrastructure, companies can eliminate the investment on infrastructure and tools. Additionally, it also provides for geographically distributed loads, which are similar to a real world situation, rather than tool-simulated loads.
To sum up, the benefits of Testing using Cloud are:

- Elimination of upfront investments on tools and infrastructure
- Creation of real word situations through simulation of geographically distributed load patterns
- Facilitation of on-demand Performance Testing for organizations

There are only selected companies including Oakridge Infotech, who are offering solutions for both testing of cloud and testing using cloud. To offer such services, companies need a deep understanding of the cloud environment, factors affecting them like security, multi-tenancy and compatibility, and most importantly, the requirements of cloud infrastructure players like Amazon.

Road Ahead

Since cloud computing is an emerging trend across the world, service providers need to equip themselves with the necessary capabilities quickly in order to meet the demands for Cloud Testing.

According to the CIO dashboard 52% of the 489 business and technology executives who responded to 2012 Digital IQ study plan to boost their spending in the private cloud this year. Those same firms are simultaneously setting their sights on the public cloud. 57% of the leadership surveyed claim they are ramping up their investments in public clouds.

According to Forrester, many leading IT vendors and organizations are betting heavily on cloud computing and are busy ramping up their capabilities in the area. Almost all Indian IT players are quickly ramping up competencies in the overall cloud computing space with the help of tie-ups with players like Microsoft, Amazon, Grid, Savvis, Vmware and Google. These hosting- and platform-based players themselves are being extremely proactive in pushing cloud-based deployments and are partnering with service providers to deliver end-to-end solutions.

Various analysts and technology advisory firms are of the opinion that the number of applications and the amount of content in the cloud now available to both consumers and corporations has grown to a critical mass and cloud computing is the way to go.

The rate at which cloud computing is being accepted as the new paradigm shift in the way technology is delivered and consumed, IT service providers would be remiss to ignore its huge potential just waiting to be tapped.

A cloud computing-based IT services model would make all the more sense for small- and medium-sized enterprises and would be an example of business model innovation that will set a new precedence in the IT industry.

CONCLUSION

The rapid pace, at which the cloud is being adopted by users and corporations alike, provides the next level of opportunity for IT service providers to ramp up their skills and address the demand, which is increasing by the day.

Also, testing teams should equip themselves with viable strategies to mitigate the risks and issues associated with cloud computing by covering additional capabilities available in the cloud computing environment.

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