Testing in the Cloud

A live demonstration of deploying testing in the cloud

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Using the Cloud: A Practical View into the Cloud world

- **The organisations use of the Cloud**
- Why and where they use the cloud
- The requirements and situation
- The solution
- **A demonstration of the Cloud in use**
- Infrastructure deployment and environments
- The practical use of the Cloud
- **Demonstration of deployment in the Cloud**
- Conclusion

The Use of the Cloud : Why did they deploy in the Cloud?

- A bricks and mortar company

- Have manufacturing and large normal distribution channels

- Have an online element.

- An opportunity to use a safe, scalable and flexible production system

- Maintained externally but the application and functions owned internally.

- Responsiveness to request and Scalability – Service levels

History

- 2 years ago they deployed to the Cloud a site. Production only. Marketing was strong and the site went live and struggled to support the load. Eventually it staggered and crashed and whilst not a disaster – was not a success. Around 7000 registered users.

- Last year the same campaign but more aggressive. They decided to load test this time. Site to support 10000 registered users. Tested for 60000-100000 transactions per hour.

- Site was heavily loaded, but the site survived because of the cloud - the ability to add capacity at the last minute. Testing took 4 weeks to get it to 65000 transactions per hour.

- This year the site is aiming for 20000 registered users.

- MARKETING TEAM ARE ENTHUSIASTIC

Testing on the Cloud

- **Requirement**:
  - Achieve up to 1.2 million hits per hour on the website within required SLA
  - Simulate users from the internet

- **The Approach**:
  - Leveraged the cloud to deploy and test their website
  - Automated performance testing to ensure scalability and stability
  - Using a true test environment deployed in the cloud

The Solution

- Run IBM Rational Performance Tester (RPT) on the Cloud
  - RPT workbench is used to create test scripts of user actions on the application
  - Scripts are replayed in RPT simulating many hundreds of users in performance schedules
  - Multiple RPT agent machines are utilised in the cloud to generate the virtual users
  - Leverage cloud datacenters from around Australia
  - Application must be visible from the internet
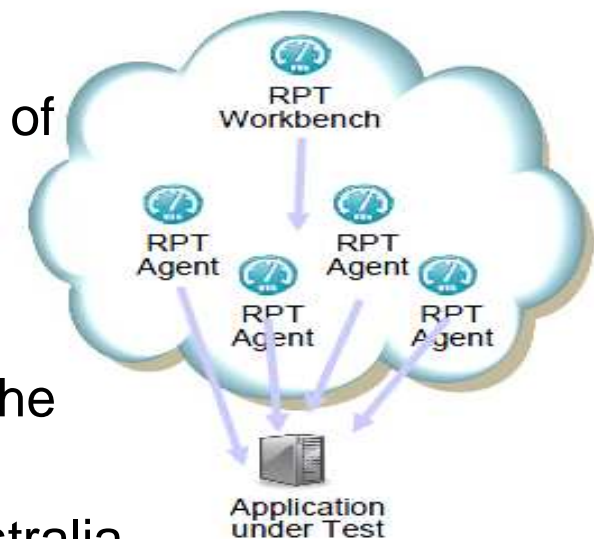
The Result

- The test was executed remotely from Sydney
- Test environment was built and replicated quickly (image of testing software available)
- Tests were slowly ramped up to 1.2 million requests over an hour
- Able to capture application performance metrics
- Measure all aspects of the system, front end as well as back end servers
- Able to connect securely to RPT workbench via remote devices
- Faster time to market and more efficient operations

DEMO

Enabling Scalable, Managed Cloud Based Environments

- Anittel – Cloud based Environments for the client site

  - Ability to deliver geographically diverse environments (e.g. for production and load testing).
  - Main Hosting facilities out of Sydney (2) and Perth (2) with satellite facilities in Brisbane, Gold Coast, Melbourne and Tasmania. DR and backup functions
  - Hosting Environment built upon CISCO, Juniper, VMware and CITRIX technologies.
  - Ability to host multi-platform Operating Systems across VMware cluster.
  - Internal private routing backed my national MPLS network and redundant external connectivity for testing workloads.

Enabling Scalable, Managed Cloud Based Load Testing

- Client and Scalable Production System - Load Test:

    - Requirements, expectations and outcomes.
    - Provided highly available geographically redundant hosting environment.
    - Initially sized and scoped based on previous years "experience".
    - No load testing lead to service outages during key load periods.

    - Through load testing last year we recognized performance bottlenecks at the Application, OS and Server level
    - We where able to tune and scale system from end to end.
    - During event we where able to scale out deployment based on performance monitoring and data gathered from testing.

Managed Cloud Based Deployment - Demonstration

- Demo Cloud Infrastructure:

    – Current methodology

        • Highly Managed VM and Network Environments

        • Template VM's ready for fast deployment

        • Performance monitoring systems

    – VMware vCloud

        • Automation and Control

        • Create Virtual Organizational Data Centers

        • Internal and External IP allocation

        • Scalable, Manageable Delivery Mechanism

Conclusion & Questions

- Cloud does offer advantages: Flexibility, Speed and costs (where not used)
- Provides access to a large infrastructure called the internet

- Fast to deploy and deliver results.

- The Cloud is not an unknown item – it is simple and accessible
- Can be used not only for web based applications
- Can be used for Functional Testing, for test management and distributed development teams

- This bricks and mortar client has moved to Cloud and the results are impressive and cost effective.