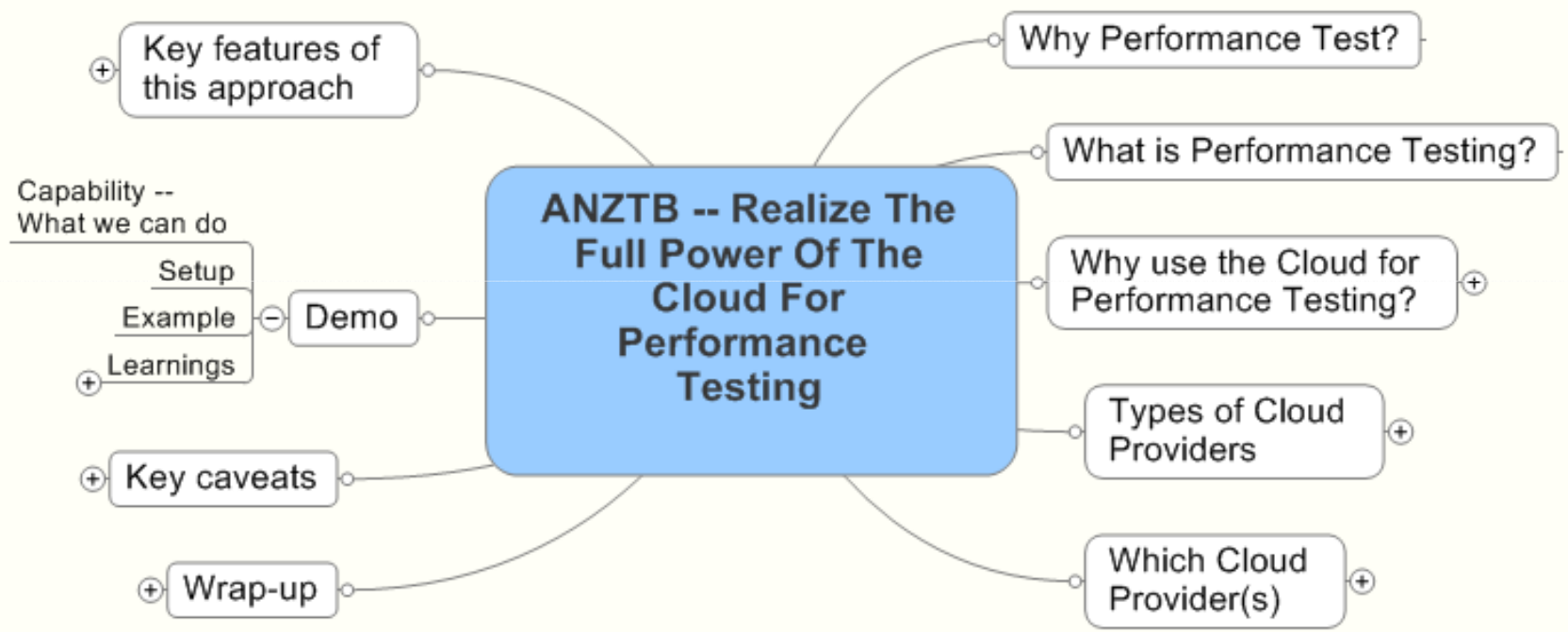
Gen-i Test Services

Realize The Full Power Of The Cloud For Performance Testing

Ian Mortimer and Gareth Shackel

Agenda


ANZTB -- Realize The Full Power Of The Cloud For Performance Testing
Key features of this approach
Capability -- What we can do
Setup
Example
Learnings
Demo
Key caveats
Wrap-up
Why Performance Test?
What is Performance Testing?
Why use the Cloud for Performance Testing?
Types of Cloud Providers
Which Cloud Provider(s)

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1. Why Performance Test?
2. What is Performance Testing?
3. Why use the Cloud for Performance Testing?
4. Types of Cloud Providers
5. Which Cloud Provider(s)
6. Key features of this approach
7. Demo
   - Capability -- What we can do
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   - Learnings
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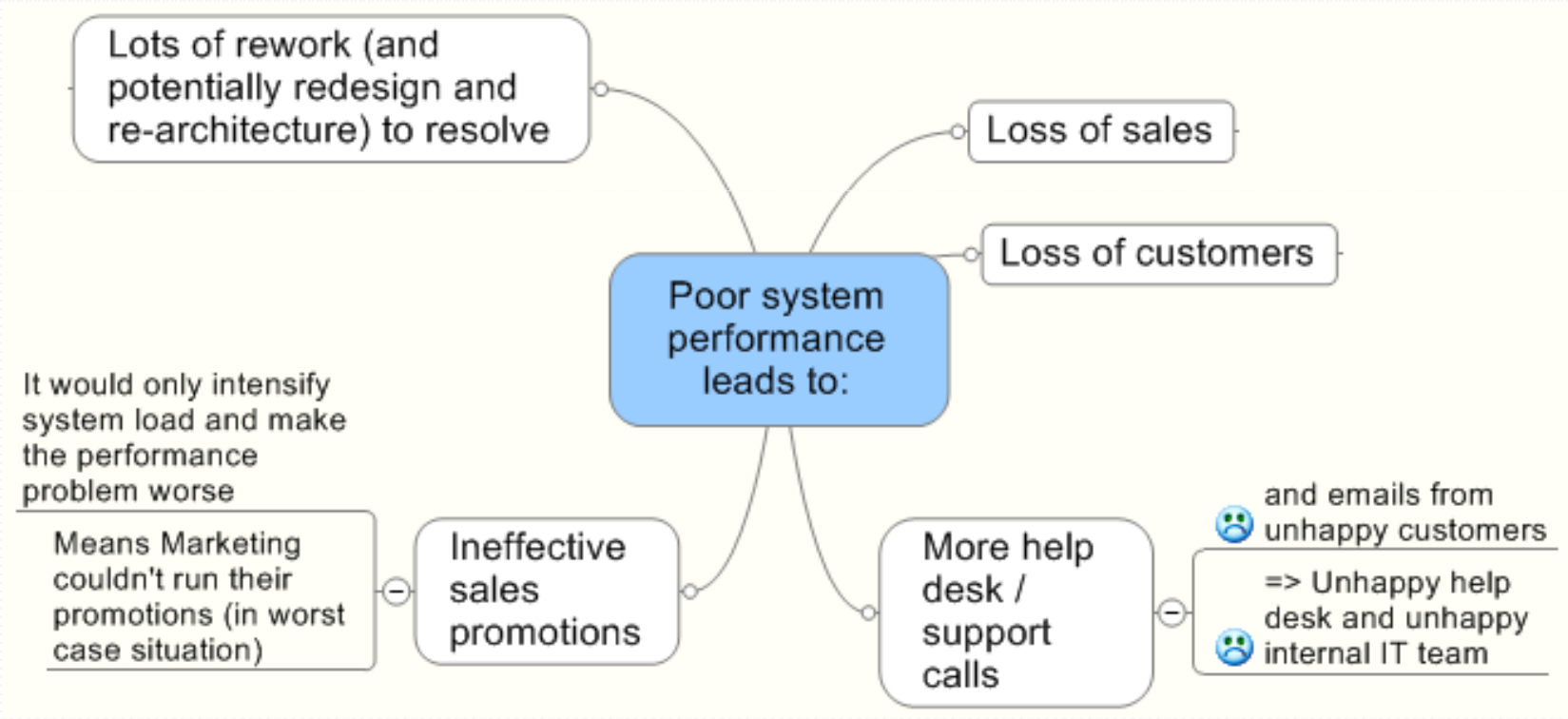
9. Wrap-up

Save time & money with the Cloud

To

Why Performance Test?

To prevent poor system performance



What is Performance Testing?

Performance Testing is usually divided into three categories:

- Performance Testing:

  To determine or validate speed, scalability, and/or stability

- Load Testing:

  To verify behaviour under normal and peak conditions to verify that your application can meet your desired performance objectives

- Stress Testing:

  To determine an application's behaviour when it is pushed beyond normal or peak load conditions

Source: Performance Testing Guidance for Web Applications: patterns & practices; J.D. Mier, Carlos Farre, Prashant Bansode, Scott Barber, Dennis Rea

Traditional Performance Testing Challenges

- Agreeing the need for Performance Testing
- Fitting it into tight project schedules
- Affordable Tools
- Affordable Bandwidth
- Network Latency
- Affordable Test Environment
- Real-time monitoring of Application Infrastructure

Why use the Cloud for Performance Testing?

- Access to cheap scalable hardware
- Access to cheap bandwidth
- Only pay for what you use
- Quick view of the user experience
  - You can get a quick view of the user experience on your website
  - At a fraction of the normal cost and effort of performance testing
- Quicker to identify bottlenecks

Types of Cloud Providers

IaaS (Infrastructure)

- Get a new server (or many servers) in minutes
- Pay per hour, so you're free to try things out
- Scale your infrastructure up and down at will

PaaS (Platform)

- Patching and scaling are done for you
- Developers concentrate on adding value, not the 'plumbing'

SaaS (Software)

- The business decides on the solution – no infrastructure to worry about
- Latest version always available, wherever you are
- Backups are part of the service

Which Cloud Provider?

- Cloud Providers that fit the IaaS Model
  - i.e. need an actual server
  - Need a pay only for what you use model
- Choose your cloud provider locations based on:
  - Where are your websites hosted
  - Where your customers / users of the website are based
- Network Latency is key
  - If choose irrelevant locations, then get misleading network latency results
    - Due to more or less hops

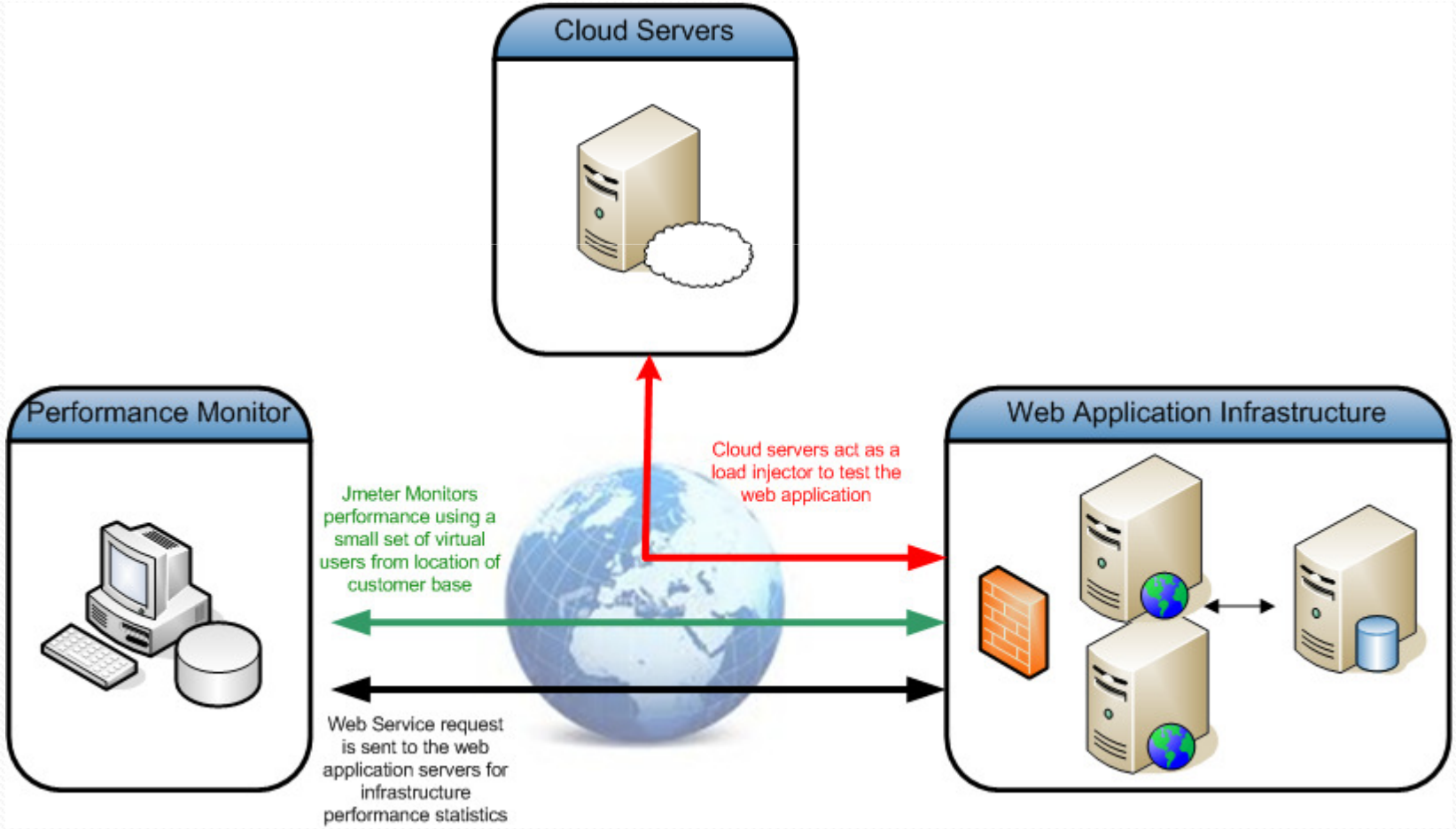
Goal

"Utilize Cloud Computing capabilities to create a low cost performance testing benchmark service to enable customers to understand how their web application will perform"

This includes:

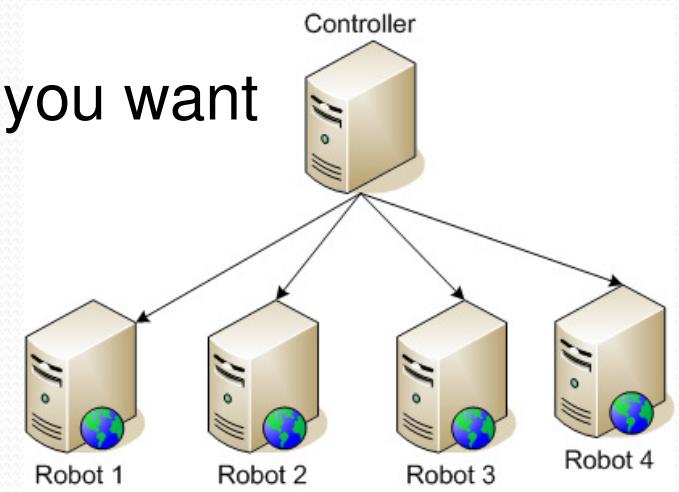
- Using the Cloud to test a Web Application
- Using the Cloud to test a Cloud based Application

Cloud Performance Testing Architecture



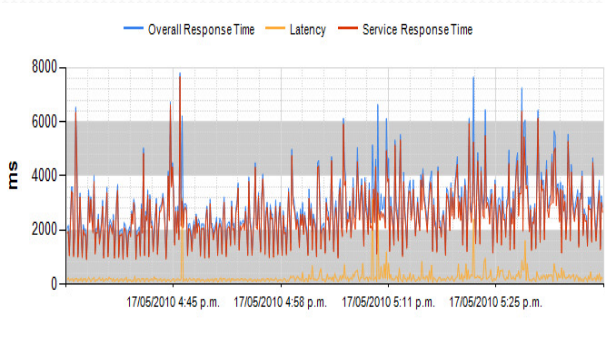
Key features of this approach …

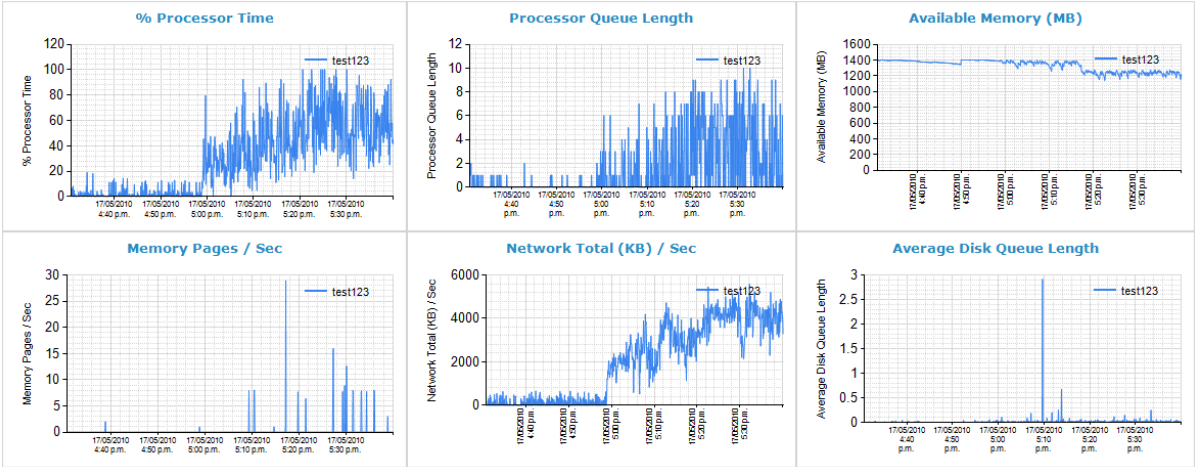
- Minimal stand-up time
- Can provide a basic core package of tests and users
  - Plus can ramp up for more complexity in the website
    - Or to focus on different technical or business risks
- Easy to script
  - Can add any number of users using a “Controller – Robot” test rig architecture
- Can schedule the tests for any time you want



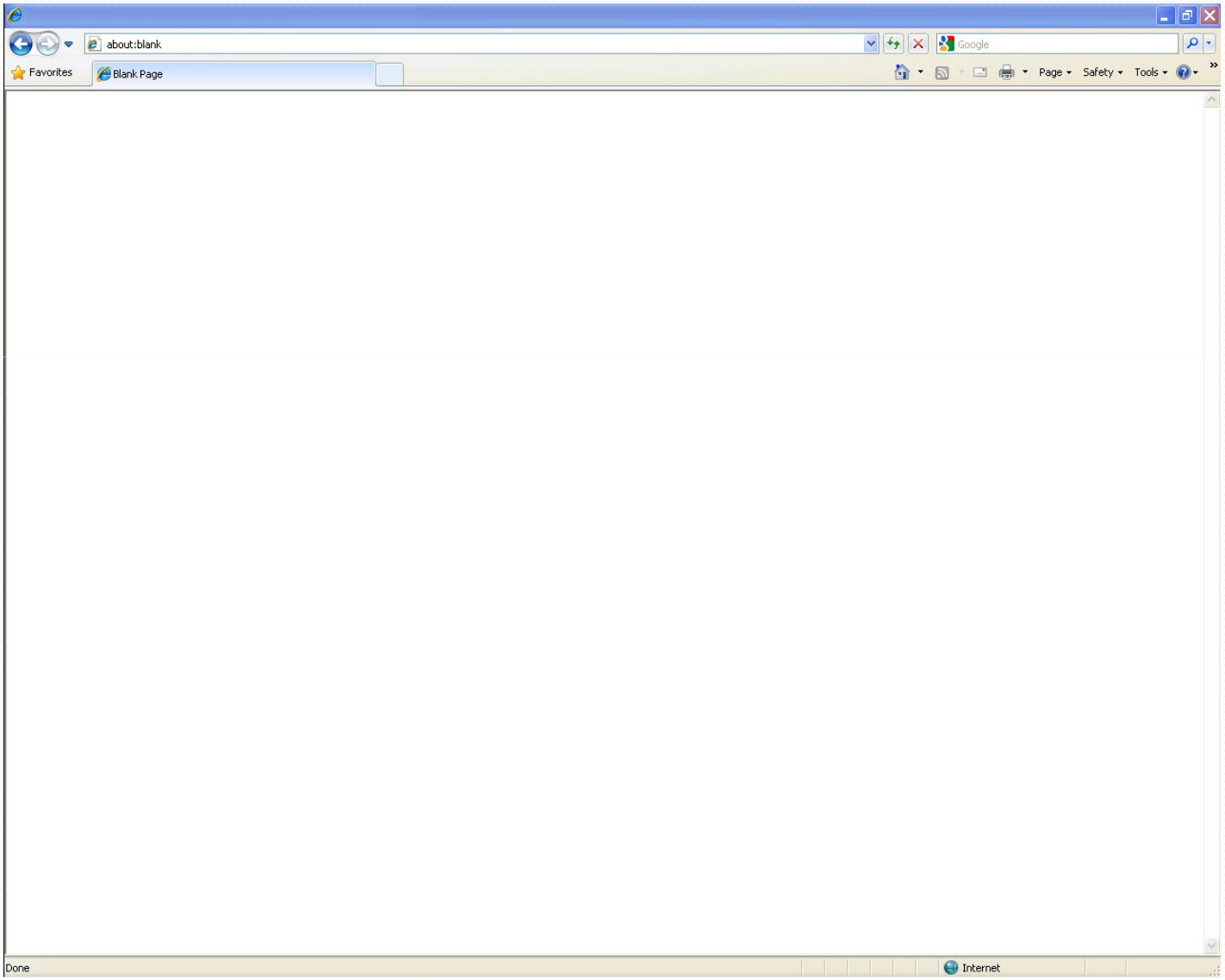
… Key features of this approach

- Test results can be monitored in real time
- Monitor for potential performance bottlenecks both:
  - Website response time
  - And the underlying infrastructure's performance
- Requires externally accessible web-sites
  - As the "Cloud" has to be able to access what we're testing
- Requires a small program to be copied onto the web application's web server





Demo


about:blank
Google
Favorites
Blank Page
Page
Safety
Tools
Done
Internet

We've Tested:

- Amazon EC2
  - US based
    - Huge scale
- Melbourne IT
  - Australian based
    - Uses VMWare Virtualized
    - In beta and is currently free
- iSERVE NZ
  - NZ based
    - Uses Citrx XenWeb

Key caveats …

- Spin up time - "*your virtual machine will be available in 30 minutes… "*
  - …2 days and 5 support calls later you can finally access the machine
- Registration time
  - *"We will process and respond to your application in less than two business days."*
- Location - watch out for this clause:
  - *"…may provide the services as well as house any data of the customer or otherwise from any jurisdiction or location that in its absolute discretion it chooses"*

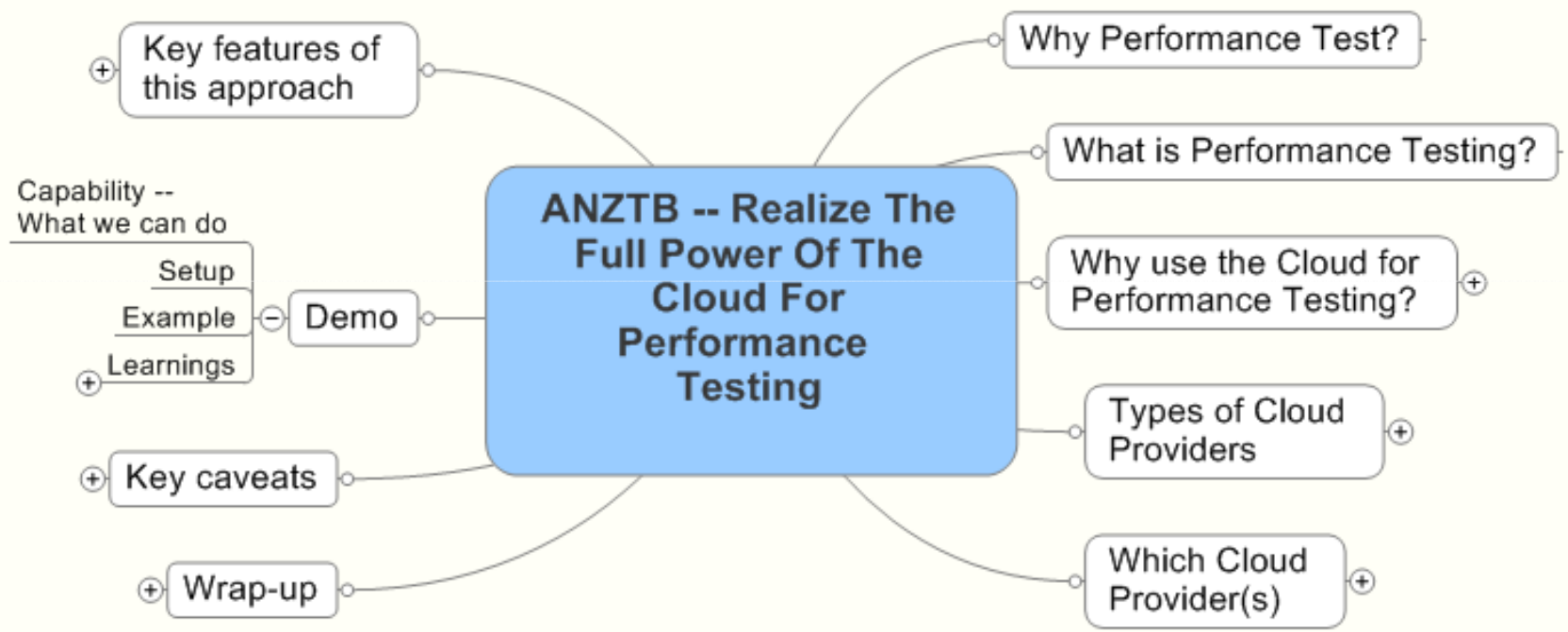
… Key caveats

- Results are dependent on the users specified what web actions they expect to be used
  - Key to performance testing being able to show what your users' experience of the website will really be like
  - If the customer provides the wrong input, then the results won't represent how the site will be used
- Infrastructure Monitoring currently supports:
  - Windows with IIS Web Server
  - Linux with Tomcat and Axis 2

Which Tools Support this Approach?

- Jmeter
- Visual Studio 2010 Ultimate & Predecessors
- HP Loadrunner in the cloud

Summary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Questions

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