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Scaling & The Cloud: Operational Best Practices


Mike McGrath
Operations Manager, Red Hat
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Infrastructure as a Service

Platform as a Service

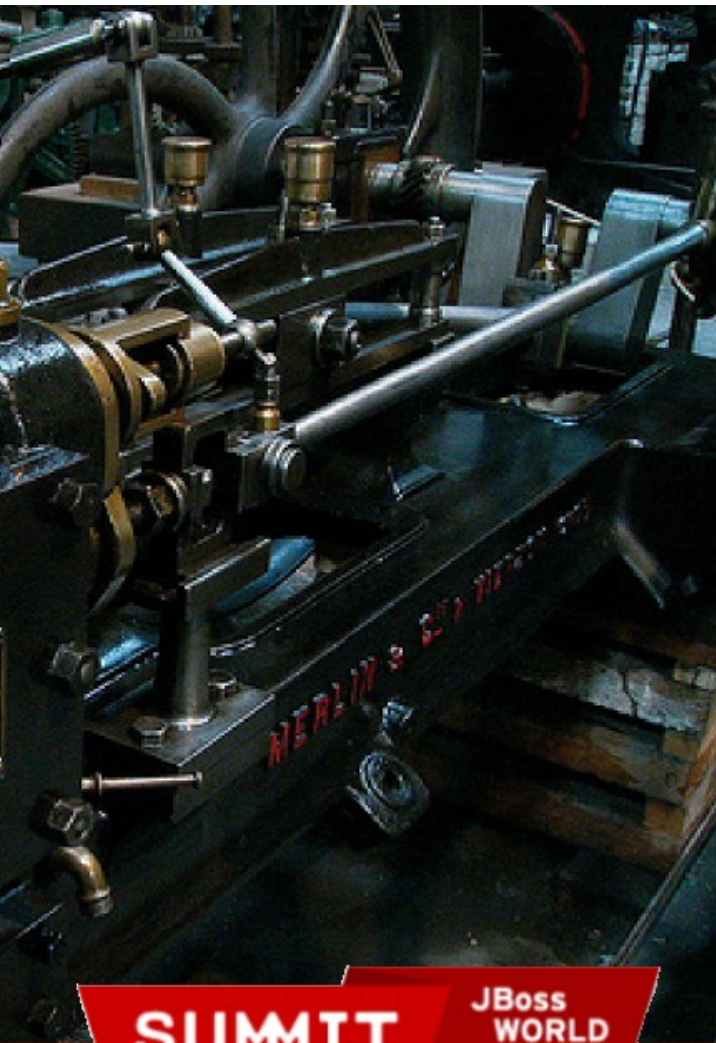
Software as a Service

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Infrastructure as a Service



Servers



Storage



Support



Devices



Network

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Platform as a Service



Language



Framework



Data



splunk>

Dependencies

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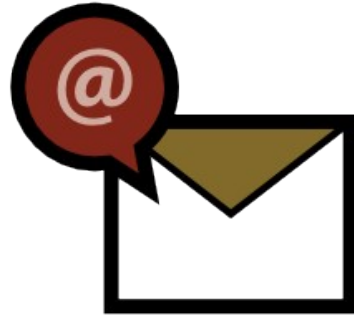
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Software as a Service



Email



Online Shopping



Business Processes

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Performance Metrics



Virtualization
Servers

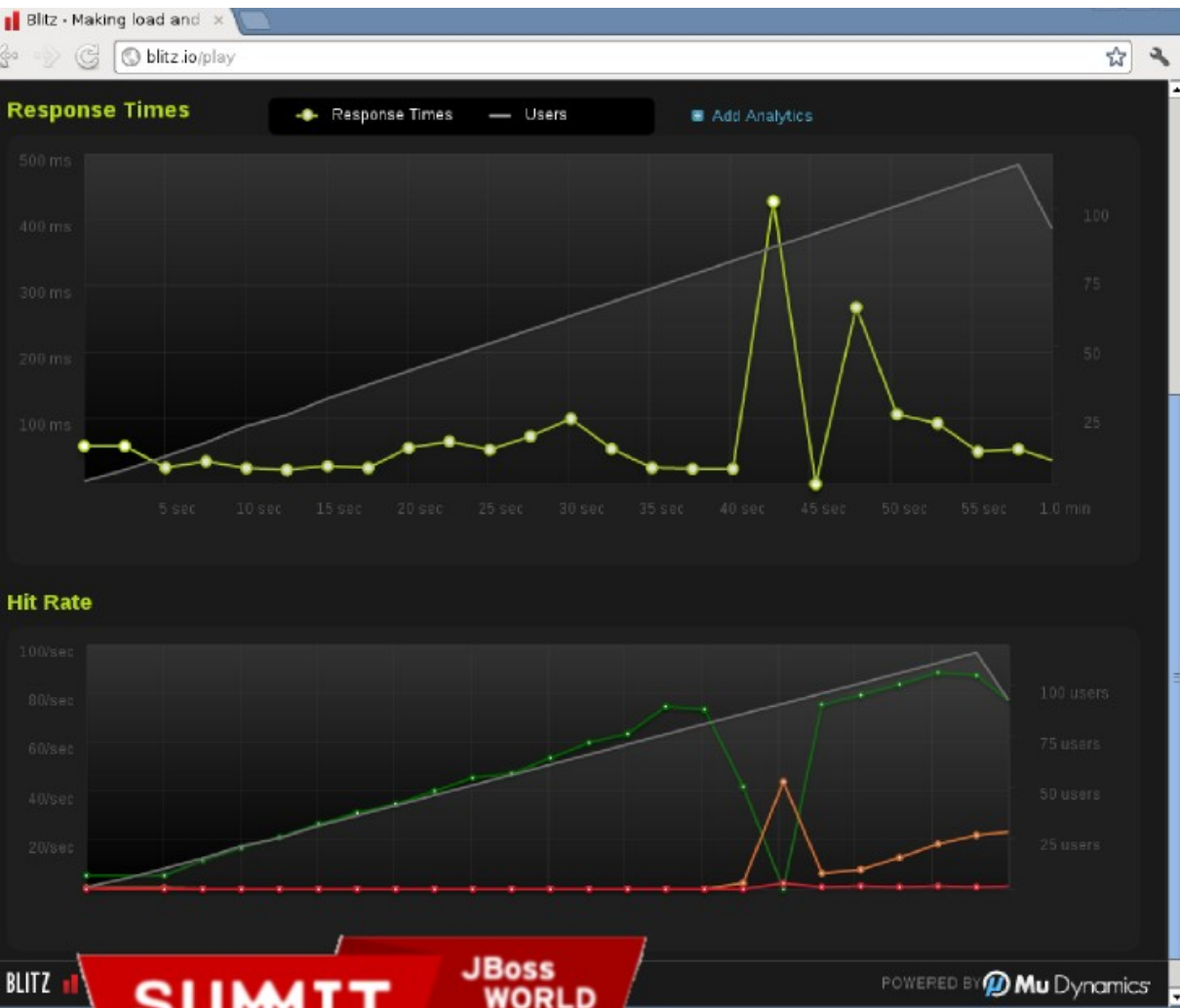
Virtualized
Machine

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Generating Load

- Favorite Load Generator: ab
- 3rd party like blitz.io

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Vertical Scaling

- A million airplanes won't get you to the space station.
- Common in traditional Computing
 - Databases (MySQL)
 - Performance "fixes"
- EC2 Instance Sizes
- OpenShift Gear Sizes

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Horizontal Scaling

- Lots of resources working together
- Cost Efficient
- Very Cloud Friendly
 - Add more resources on demand
 - Remove un-needed resources
- OpenShift Auto Scaling
- New architectures like MongoDB

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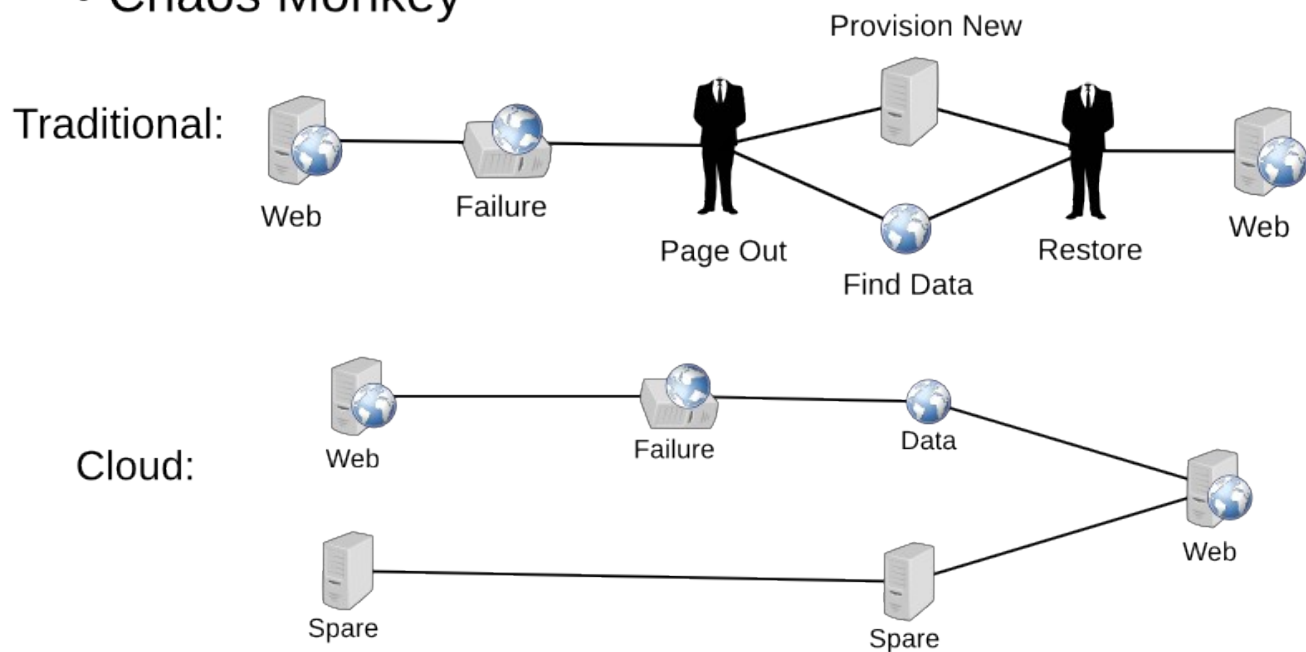
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Failures and Auto Recovery

- Focus here is on rapid recovery (MTTR)
- Plan for Failure
- Chaos Monkey



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High Latency Computing

- Resources not on a LAN
- Shared resource spikes
- Multiple Geography HA

- Mitigation Techniques
 - Local Caches (memcached, redis)



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Rapid Resource Allocation

- IaaS
- Kickstart vs Images
- Remember Ghost?
- Rapid Shutdowns

- PaaS like OpenShift

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Tools

Creative Commons: <http://creativecommons.org>

Inkscape: <http://inkscape.org>

Sozi: <http://sozi.baierouge.fr/>

Attributions

Clouds: <http://www.flickr.com/photos/theaucitron/5810163712/>

Machine a vapeur Merlin: <http://www.flickr.com/photos/bdesham/2432400623/sizes/z/in/photostream/>

Legos: <http://www.flickr.com/photos/bdesham/2432400623/sizes/z/in/photostream/>

Space Shuttle: <http://www.flickr.com/photos/cosmobc/4484037153/sizes/m/in/photostream/>

F16 Thunderbirds: <http://www.flickr.com/photos/72213316@N00/2624004934/>

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Question Mark: <http://www.flickr.com/photos/drachmann/327122302/sizes/z/in/photostream/>