magento live

UK 2013

# Magento Performance Testing

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Magento
an ebay inc company

# Magento Performance Testing

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# Are performance and customization compatible?

# The Intent

- To enable merchants to test the performance their Magento installations
- To enable developers to test the performance impact of their Magento customizations
- To enable performance testing across the Magento ecosystem
- To enable the comparison of these performance tests (Benchmarking)
- To provide commonly used methods, scenarios, and terminology to describe testing activities

# Performance

Responsiveness and stability under a particular workload

# Benchmarking

Comparing system performance metrics, typically to recommended best practices or industry standards

# Scalability

1. …ability to process growing amounts of requests in a capable manner
2. …ability to expand the system resources to increase capacity

# Reliability

1. …ability to yield the same or compatible results for different tests
2. …ability for the system to operate as designed

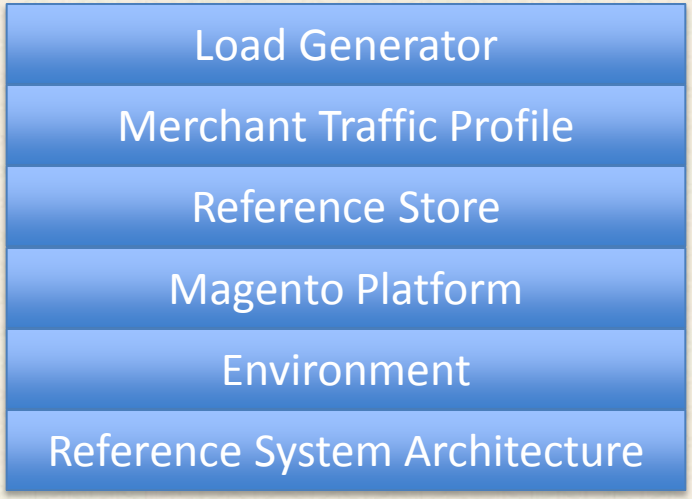
# Reproducibility

1. …ability to conduct a performance test and observe similar results on multiple test occurrences
2. …ability for a third party to independently duplicate a test and observe comparable results

# The Approach

- Provide a performance test framework
  - Use an open-source toolset
- Provide reference architectures
- Provide sample data
  - Small merchant profile
  - Large merchant profile
- Provide test scenarios
  - Traffic profiles
  - Shopper behavior
  - Buyer behavior

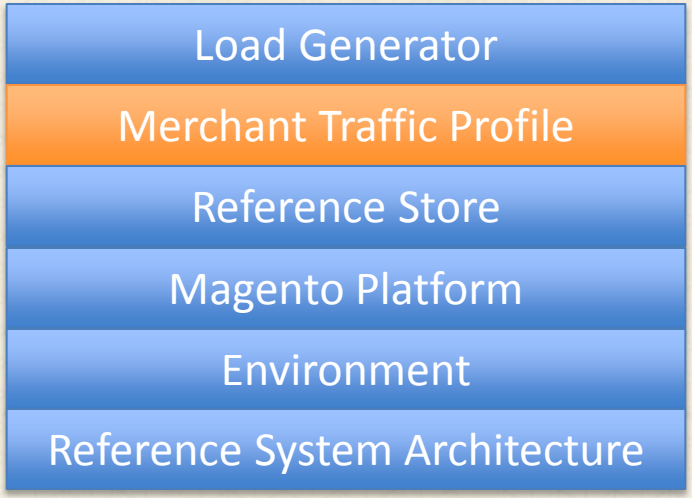
# Control Variables - Top Level Groups



# Example: Load Generator

- Hardware
  - Hardware Specifications
  - Connectivity
- Software
  - Gatling (github.com/excilys/gatling)
  - **jMeter** (jmeter.apache.org)
    - jmeter 2.9 r1437961

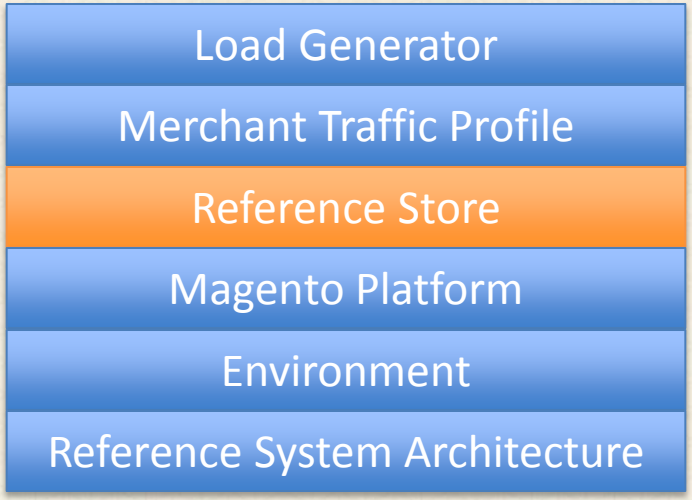
# Control Variables - Merchant Traffic Profile



# Example: Merchant Traffic Profile

- Test Scripts
  - Varies by load generator, jmx files for jMeter
- Traffic Profile
  - 100 maximum concurrent users
  - 750 user sessions
    - 30% view product
    - 62% view product & add to cart
    - 4% guest checkout
    - 4% customer checkout

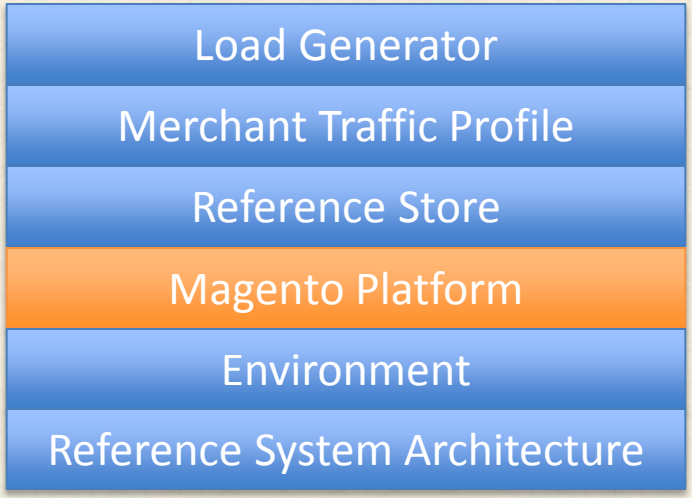
# Control Variables - Reference Store



# Example: Reference Store

- Store Data
  - Snapshot of the database, or
  - Generated dataset in a ready-to-test condition
- Store Size
  - 1000 SKUs…100,000 SKUs…500,000 SKUs
- Store Complexity
  - Single Store/Single Site
  - Multi Store/Multi Site

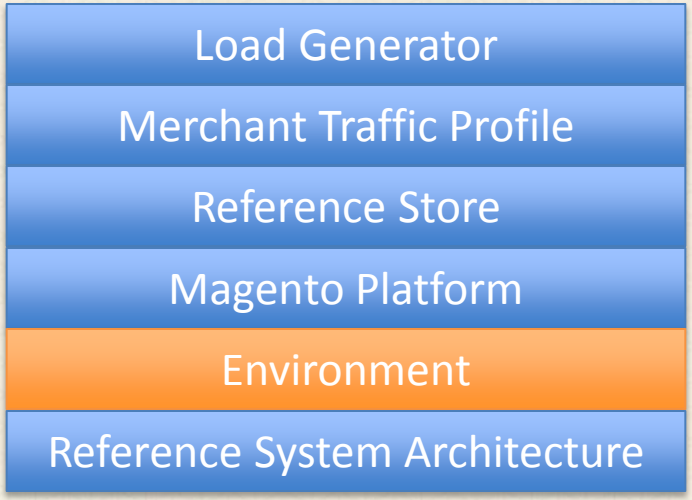
# Control Variables - Magento Platform



# Example: Magento Platform

- Magento Version
- Magento Configuration
  - local.xml
- Customizations
- Code Changes

# Control Variables - Environment



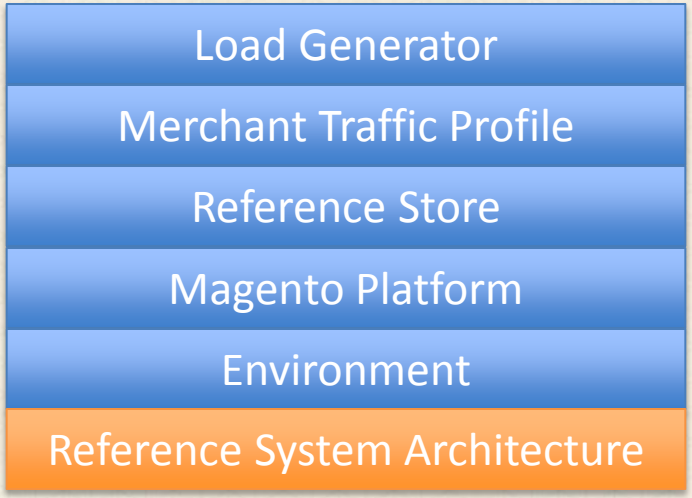
# Example: Environment (Software Specs)

- Software Load Balancer, nginx/1.4.2
- Physical Host OS, Ubuntu 12.04.3 LTS
- VM OS, CentOS release 6.4
- Memcache, memcached 1.4.4
- MySQL, 5.1.71-rel14.9 Percona Server (percona)
- PHP, PHP 5.4.20 (remi)
- PHP.ini settings
  - Session Configuration
- OS environment settings
  - THP (always/never)

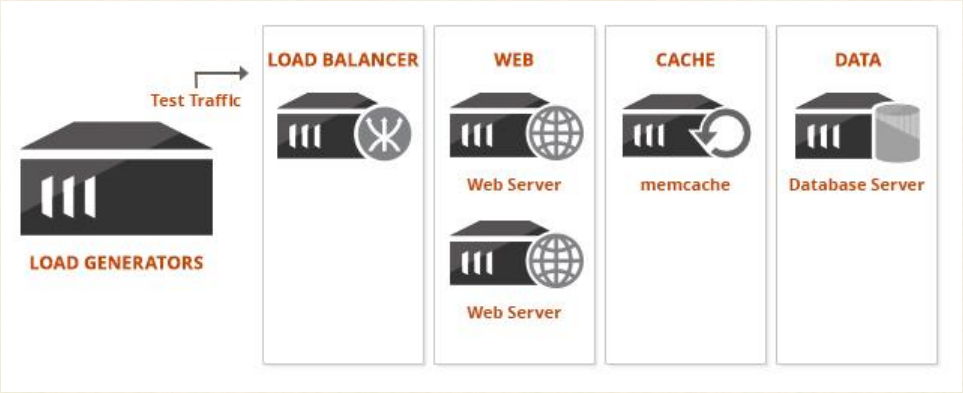
# Example: Environment (Hardware Specs)

- Physical Server = HP ProLiant SL230 Gen8
  - 2x Xeon E5-2660 CPU
    - 2.2GHz, 8 core, 20MB L3 cache
  - 128 GB RAM
  - 4x SAS 600GB HDD
    - System Volume: 2xHDD, RAID1
    - Data Volume: 2xHDD, RAID0
- Virtual Servers
  - test32 = 8x VCPU, 32 GB RAM
  - test16 = 4x VCPU, 16 GB RAM
  - test08 = 4x VCPU, 8 GB RAM

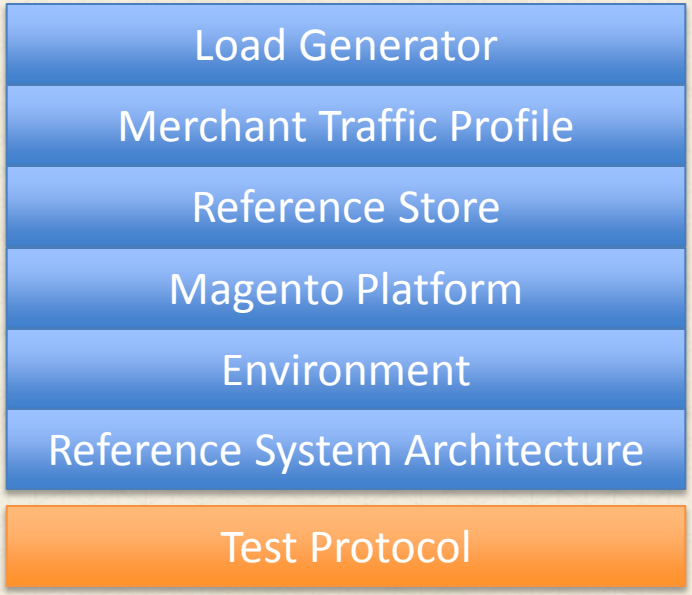
# Control Variables - Reference System Architecture



# Example: Reference System Architecture



# Test Protocol

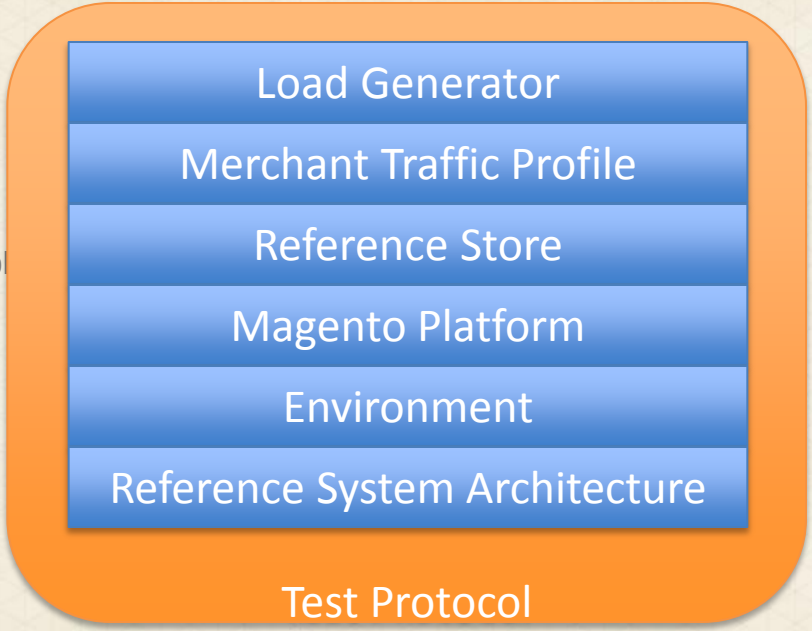


# Example: Test Protocol

- Preparation
  - Script changes are not isolated, prepare database state before each test run
- Execution
  - Ramp up time = 600 seconds
  - Run the scripts once without recording results (warm-up)

# The Technique - Performance Test Control Variables

- **Load Generator:** Hardware Specs, Connectivity, Software, Settings
- **Merchant Traffic Profile:** Test Scripts, Traffic Profile, Concurrent Sessions, Conversion Rate
- **Reference Store:** Store Data, Store Size, Store Compl
- **Magento Platform:** Magento Version, Configuration, Customization & Code Changes
- **Environment:** PHP (Framework, Version, Settings), Software Specs, Hardware Specs, Virtualization
- **Reference System Architecture:** Connectivity, Deployment Topology, Server Provisioning
- **Test Protocol:** Steps to produce or reproduce results, Preparation, Execution



# The Simple Benchmark

## Comparing your system's performance against itself

- Preparation
  - Provision your equipment
  - Configure your environment
  - Prepare your store data
- Initial Run
  - Execute the performance test
- Comparison Run
  - Prepare your store data (again)
  - Change a limited number of control variables
  - Execute the performance test (again)
- Repeat….

# Do you use jMeter now?

# The Load Generator Tool - jMeter

- What it does
  - Portable tool (100% Java)
  - Scriptable
  - Can be customized
  - Visualization

- What it doesn’t do
  - Does not render HTML
  - Does not execute JavaScript
  - Tests the application, not the user experience

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