Magento®

# Magento Enterprise Edition 1.13:
# Benefits and Upgrade Best Practices

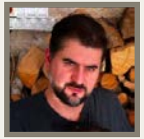
WEBINAR

Magento Expert Consulting Group Webinar | May 29, 2013

# The presenters

## Magento Expert Consulting Group

Magento EC^g



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# Today’s agenda

- Why Upgrade?
- Magento Enterprise Edition 1.13
- Upgrade Process and Best Practices
- Q&A

I don’t want to disrupt my business

I’ve got my bases covered
with custom code

# Why Upgrade?

My current release is working fine

# Why Upgrade?

- New Features
- Performance Gains
- Improvements

# Why Upgrade?

## ROI

- New market segments (products, customers, geographies, brands, distribution models)
- Larger number of SKUs (products, categories and type)
- Larger number of visitors and orders
- More websites and stores
- Larger backend operations
- Increase in AOV (more items)
- Integration with new technologies

## TCO

- Replaces workarounds
- Reduces maintenance and customization
- Tax Rounding Issue

# Magento Enterprise Edition 1.13

# Enterprise Edition 1.13 Performance

## Major Themes

- Improved merchandizing activity by refactoring indexing
- Faster browsing and buying experience
- More page views and orders using existing resources

# Indexing

# Indexers

## Specific optimizations

- Full re-index performance has improved
- Full re-index is required in limited cases of system changes
- Most of re-index operations are processed on the fly (changelog)
- Only changed entities are being processed
- Ensure Frontend availability
- Indexers run in the background
- Improved architecture utilizing materialized view and job queues

# Faster Full Re-Indexing

Standard Merchant Profile*

Products: 1000K
Simple, Configurable

Performance improved by

**83%**

| Release | Time |
|---|---|
| 1.12.0.2 | 5h:48m:00s |
| 1.13 | 0h:59m:00s |

*Standard HW/SW Configuration

# Faster Partial Re-Indexing

Standard Merchant Profile*

Products: 1000K
Simple, Configurable

| Action | 1.12 | 1.13<br>20 products | 1.13<br>200 products |
|---|---|---|---|
| Change Product Description | 84 min | 4 secs | 6 secs |
| Change Product Price | 9 min | 0.86 sec | 1.2 secs |
| Change Inventory | 56 sec | 0.11 sec | 0.21 sec |

*Standard HW/SW Configuration

Partner

theOTHERmedia

Merchant

Paul Smith

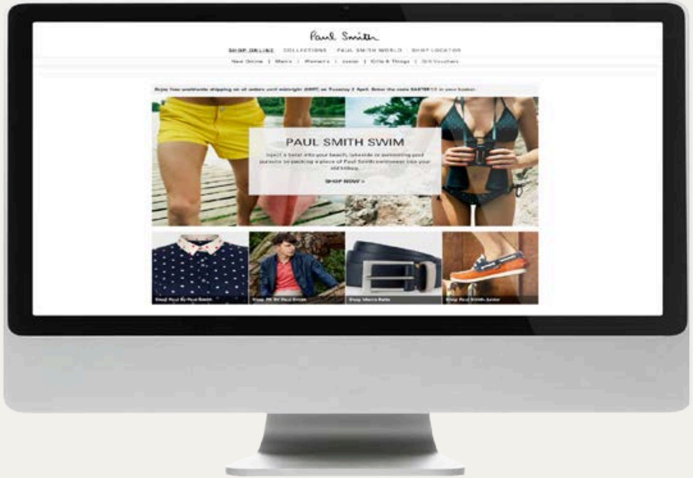
## Merchant Profile

Products: 30K
Storeviews: 4
Version: EE 1.12

Indexing improved by

**8X**

across multiple indexers


Paul Smith
PAUL SMITH SWIM

# Caching and Checkout

# Caching Improvements

## Technical Details

- Caching validation via tags
- Simple relationship between content and a given page
- New cache adapters
  - File-based for single server environments
  - Redis-based for multi-sever environments

# Checkout Improvements

**Improve order submission time by:**

- Fixing locale switching logic
- Updating the RSS feed cache only when necessary

**Reduce checkout response time by:**

- Loading relevant steps only
- Loading progress for the current checkout step only

**Remove unnecessary calls to gift-wrapping functionality**

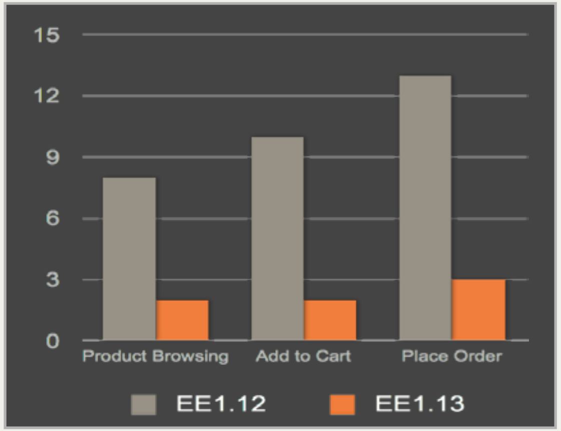
# Improved Consumer Experience

## Standard Merchant Profile*

Visitors: 50K/day
Page Views: 1M/day
Orders: 18K/day
Peak Orders: 3K/4 hours
Concurrent Users: 1K

**65%**

Improvement
in page
load times



*Standard HW/SW Configuration

# More Orders, Same Hardware

## Standard Merchant Profile*

Visitors: 50K/day
Page Views: 1M/day
Orders: 18K/day
Peak Orders: 3K/4 hours
Concurrent Users: 1K

| Metrics | 1.12 | 1.13 | % Change |
|---|---|---|---|
| Orders/day | 26K | 34.6K | **33%** |
| Page Views/day | 5.2M | 6.78M | 31% |

*Standard HW/SW Configuration

Partner

NBS System

AdFab digital factory

Merchant

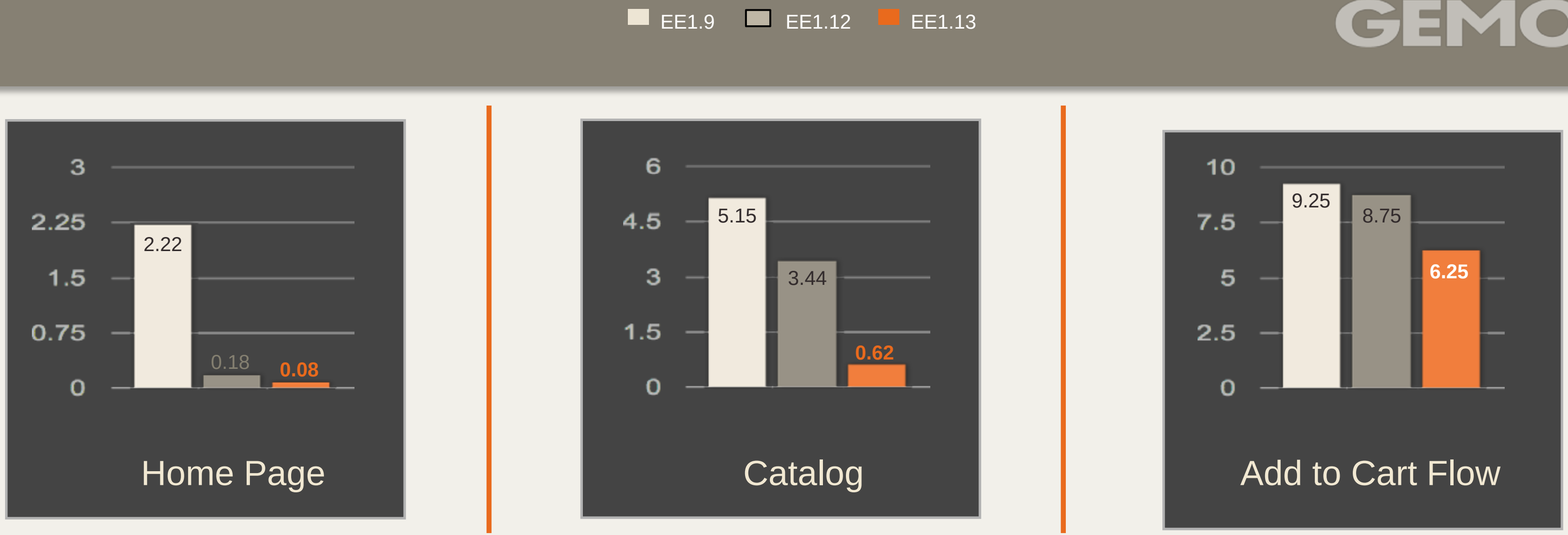
GÉMO

## Merchant Profile

Products: 60K
Peak Visitors: 150K/day
Peak Orders: 4600/day
Storeviews: 1
Existing Version: EE 1.9

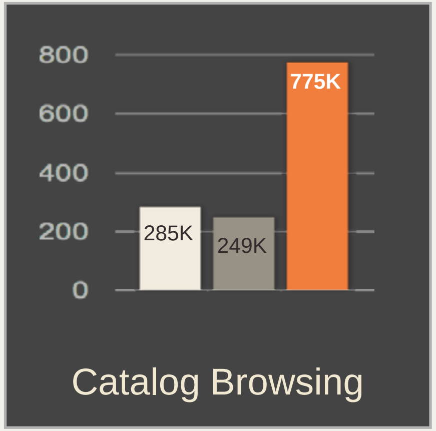
GÉMO
Chic Family!
3€99
T-shirt
La tendance au meilleur prix
Livraison et retour gratuits en magasin GÉMO
à chacun son style
L'accent sur la mode.

# Page Load Time (seconds)

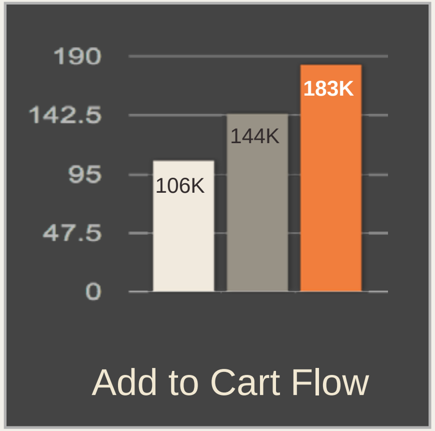


# Unique Visitors (in 1,000's)

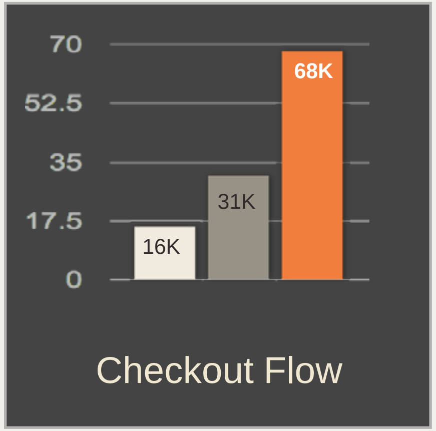
⬜ EE1.9 ▢ EE1.12 🟧 EE1.13



Catalog Browsing



Add to Cart Flow



Checkout Flow

For the full results: www.tinyurl.com/imagine2013

Partner

Merchant

## Merchant Profile

Products: 60K
Peak Visitors: 150K/day
Peak Orders: 4600/day
Storeviews: 1
Existing Version: EE 1.9

Serve
**more orders**
with the
same hardware

GÉMO
Chic Family!
3,99
T-shirt
la tendance, au meilleur prix
Livraison et retour gratuits en magasin GÉMO
à chacun son style
L'accent sur la mode.

Taxes

Shipping

Checkout

Pricing

Customers

DB Accesses

Payments

Additional info: http://www.magentocommerce.com/knowledge-base/entry/ee113-later-release-notes

# Upgrade Process Best Practices

# Gap Analysis Overview

**Why Gap Analysis?**

Figure out where you are, where you need to be, and how to get there.

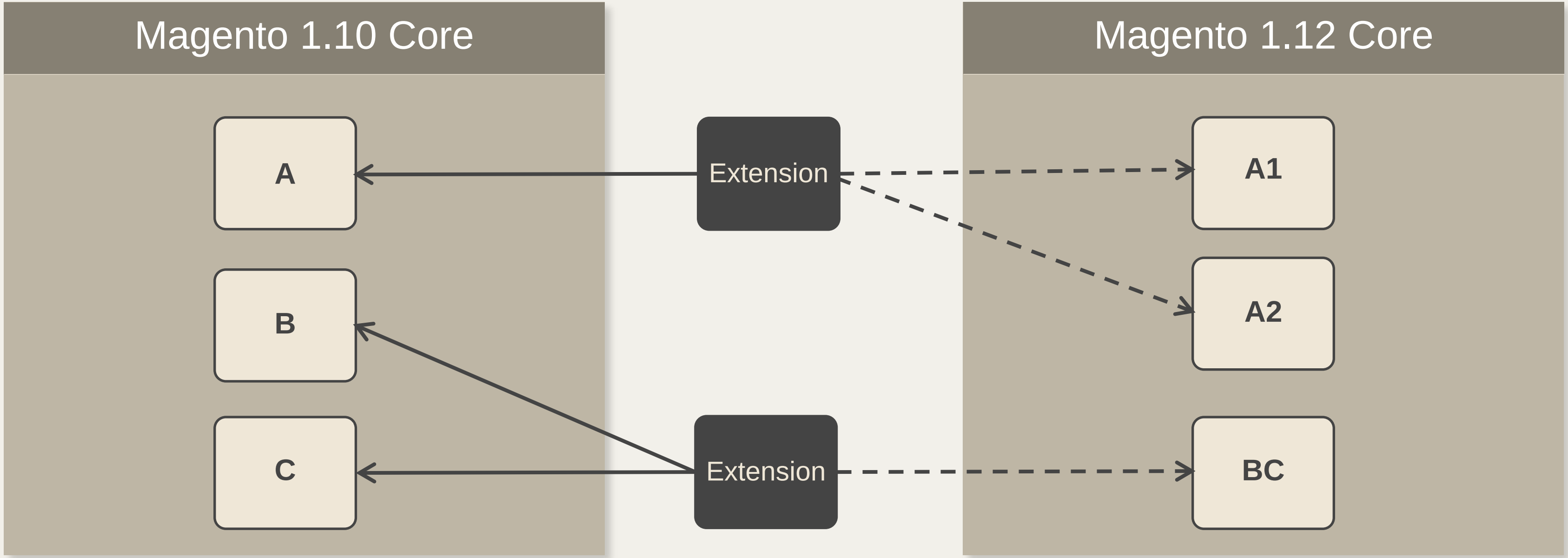
**What to do…**

- Review customizations, core modifications and database structure
- Review Templates

MIND THE GAP

# Review Customizations

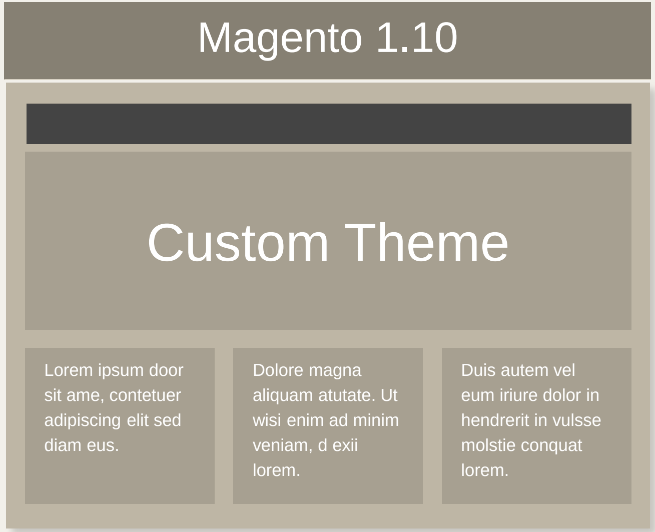
## Gap Analysis and Upgrade Path



Magento 1.10 Core
A
B
C
Extension
Extension
Magento 1.12 Core
A1
A2
BC

# Review Templates

## Gap Analysis and Upgrade Path



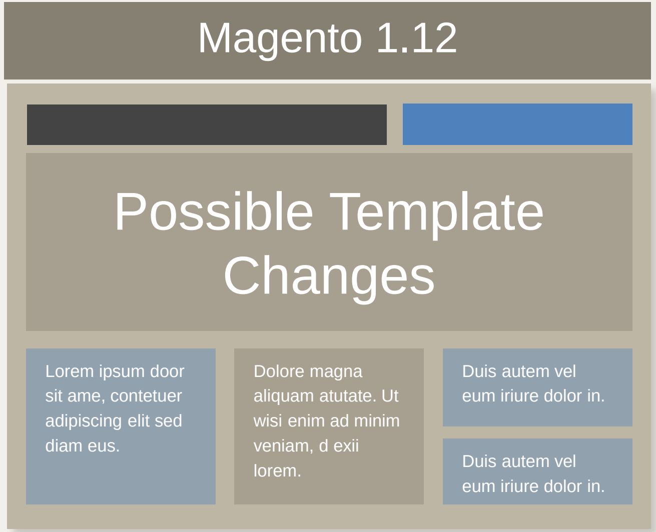
Magento 1.10

Custom Theme

Lorem ipsum door sit ame, contetuer adipiscing elit sed diam eus.

Dolore magna aliquam atutate. Ut wisi enim ad minim veniam, d exii lorem.

Duis autem vel eum iriure dolor in hendrerit in vulsse molstie conquat lorem.



Magento 1.12

Possible Template Changes

Lorem ipsum door sit ame, contetuer adipiscing elit sed diam eus.

Dolore magna aliquam atutate. Ut wisi enim ad minim veniam, d exii lorem.

Duis autem vel eum iriure dolor in.

Duis autem vel eum iriure dolor in.

# 1.12 vs. 1.13

**Didn’t you just change performance?**

Although performance was the focus of the improvements in 1.13, there are key areas you should be aware of:

**Mind the gap if you’ve customized…**

- Indexers
- Caching
- Checkout
- Taxes

MIND THE 1.13 GAP

# 1.12 vs. 1.13 Gap Analysis

## Indexing Customizations

### If you customized indexers for

- Performance tweaks
- Partial re-index

### You should consider changes in 1.13

**Module:** Enterprise_Index

- New module which manages index execution queue.

**Module:** Enterprise_Catalog

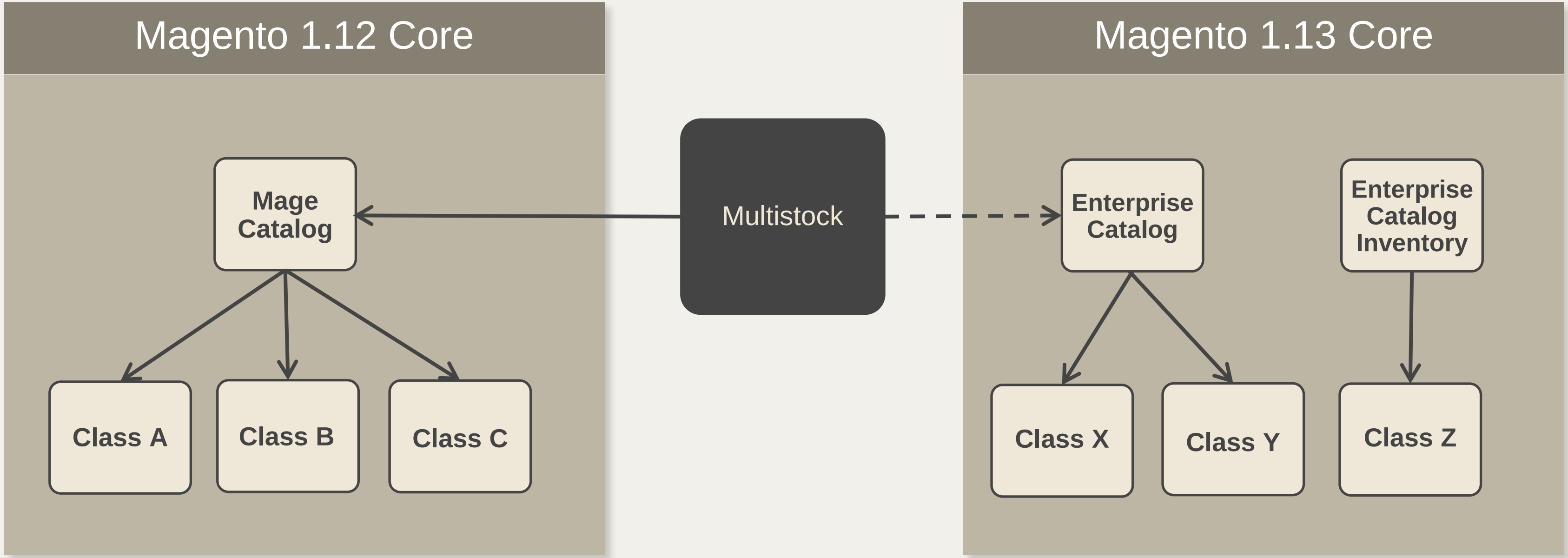
- New module which contains enhanced catalog indexers.

**Module:** Enterprise_CatalogInventory

- New module which contains enhanced inventory indexers.

# Indexing Customizations

## Gap Analysis and Upgrade Path


Magento 1.12 Core
Mage Catalog
Class A
Class B
Class C
Multistock
Magento 1.13 Core
Enterprise Catalog
Enterprise Catalog Inventory
Class X
Class Y
Class Z

# 1.12 vs. 1.13 Gap Analysis

## Caching Customizations

### If you customized cache for

- Partial cache refresh
- Full Page Cache fixes

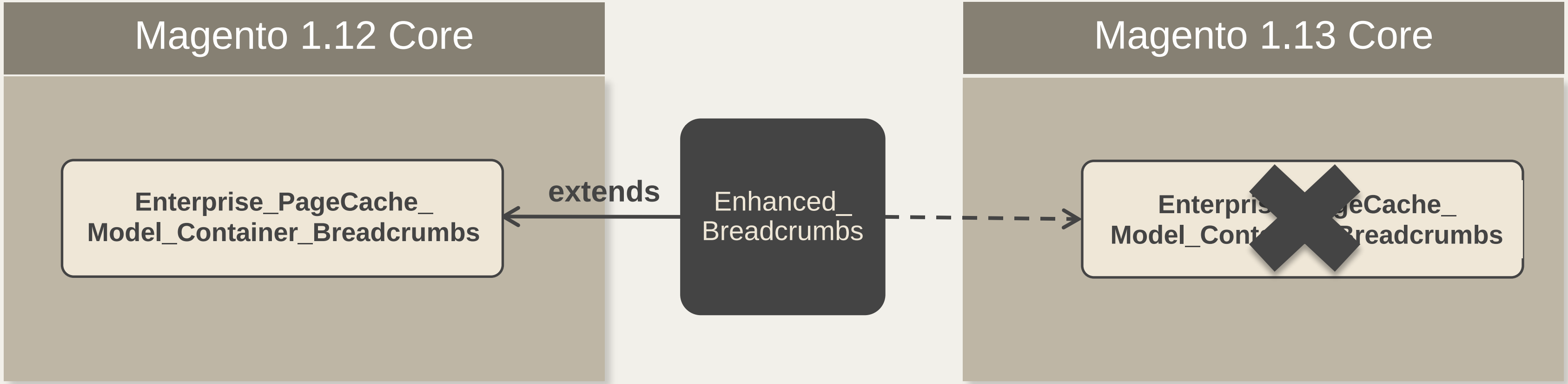
### You should consider changes in 1.13

**Module:** Enterprise_PageCache

- Now support specific product and category tags, which allows to refresh cache partially.
- New event listeners added (“cataloginventory_stock_full_reindex”, “cataloginventory_stock_partial_reindex”, etc) which allow invalidating cache after partial and full re-index.
- “Enterprise_PageCache_Model_Config” class was modified to support setting specific lifetimes for certain blocks.

# Caching Customizations

## Gap Analysis and Upgrade Path


Magento 1.12 Core
Enterprise_PageCache_
Model_Container_Breadcrumbs
extends
Enhanced_
Breadcrumbs
Magento 1.13 Core
Enterpris geCache_
Model_Cont readcrumbs

# 1.12 vs. 1.13 Gap Analysis

## Checkout Customizations

**If you customized the checkout process for**

- Better performance
- Advanced experience

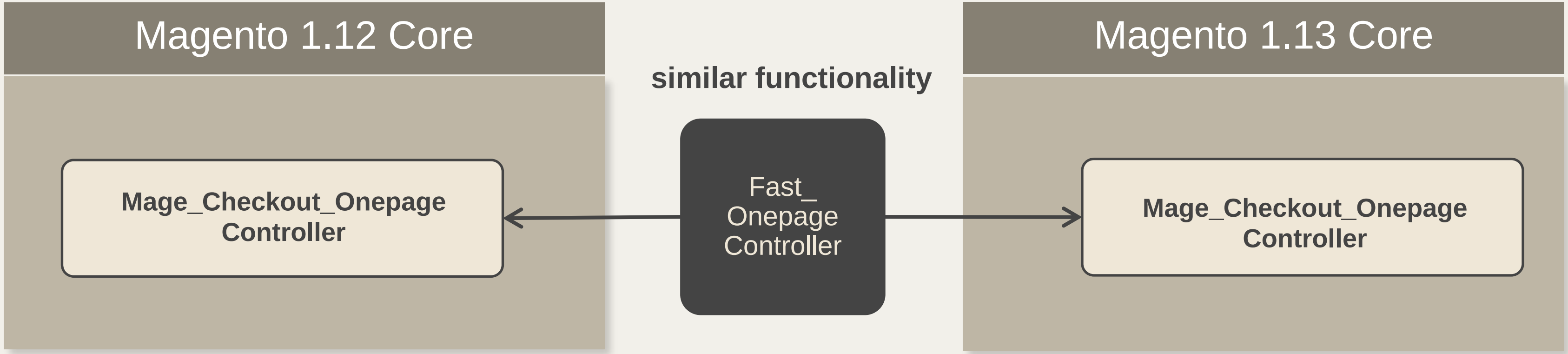
**You should consider changes in 1.13**

**Module:** Mage_Checkout

- "Mage_Checkout_OnepageController" loads only current the block corresponding to the current step.
- "Mage_Checkout_Block_Cart_Item_Renderer" introduced new functionality related to rendering gift registry.

# Checkout Customizations

## Gap Analysis and Upgrade Path



Magento 1.12 Core

**Mage_Checkout_Onepage Controller**

similar functionality

Fast_ Onepage Controller

Magento 1.13 Core

**Mage_Checkout_Onepage Controller**

# 1.12 vs. 1.13 Gap Analysis

## Tax Customizations

### If you customized taxes

- Rounding issue

### You should consider changes in 1.13

**Module: Mage_Tax**

- “Mage_Tax_Model_Sales_Total_Quote_Tax” introduced new functionality regarding rounding totals.
- Totals order is changed in “Mage_Weee” module.
- Taxes calculated logic slightly changed in “Mage_Tax_Helper_Data”.

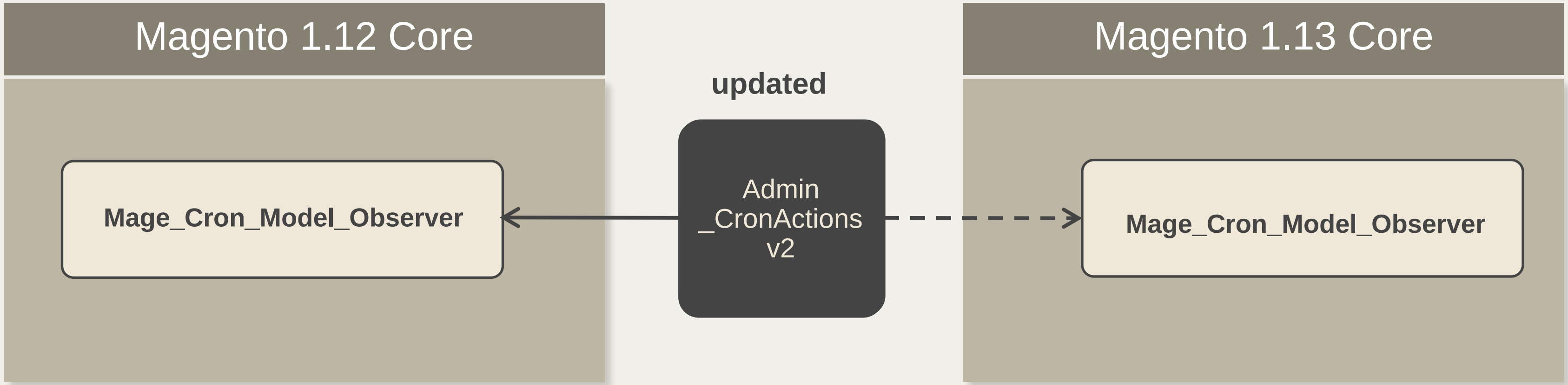
# 1.12 vs. 1.13 Gap Analysis

**Miscellaneous modules to consider:**

- “Enterprise_Mview” module implements materialized view.
- “Enterprise_Queue” module implements queue.
- “Enterprise_UrlRewrite” module implements new URL rewrite logic.

# Miscellaneous Customizations

## Gap Analysis and Upgrade Path


Magento 1.12 Core
Mage_Cron_Model_Observer
updated
Admin _CronActions v2
Magento 1.13 Core
Mage_Cron_Model_Observer

# 1.12 vs. 1.13 Gap Analysis

## URL Rewrites in 1.13.0

**Be aware…**

- EE 1.13.0.0 doesn't support using the same URL keys for different entities.
- EE 1.13.0.0 modifies same keys during to upgrade and keep it in database.

**And!**

- There is a specific use case when the upgrade script may not work as expected.

| Entity ID | Old Request Path | New Request Path |
|---|---|---|
| 23 | shoes | shoes |
| 27 | shoes | shoes-1 |
| 50 | shoes-1 | shoes-1 |
| 52 | shoes-1 | shoes-1-1 |

# Database Specifics

- Enterprise 1.13 uses *MySQL database triggers* to improve the database access during the reindex.

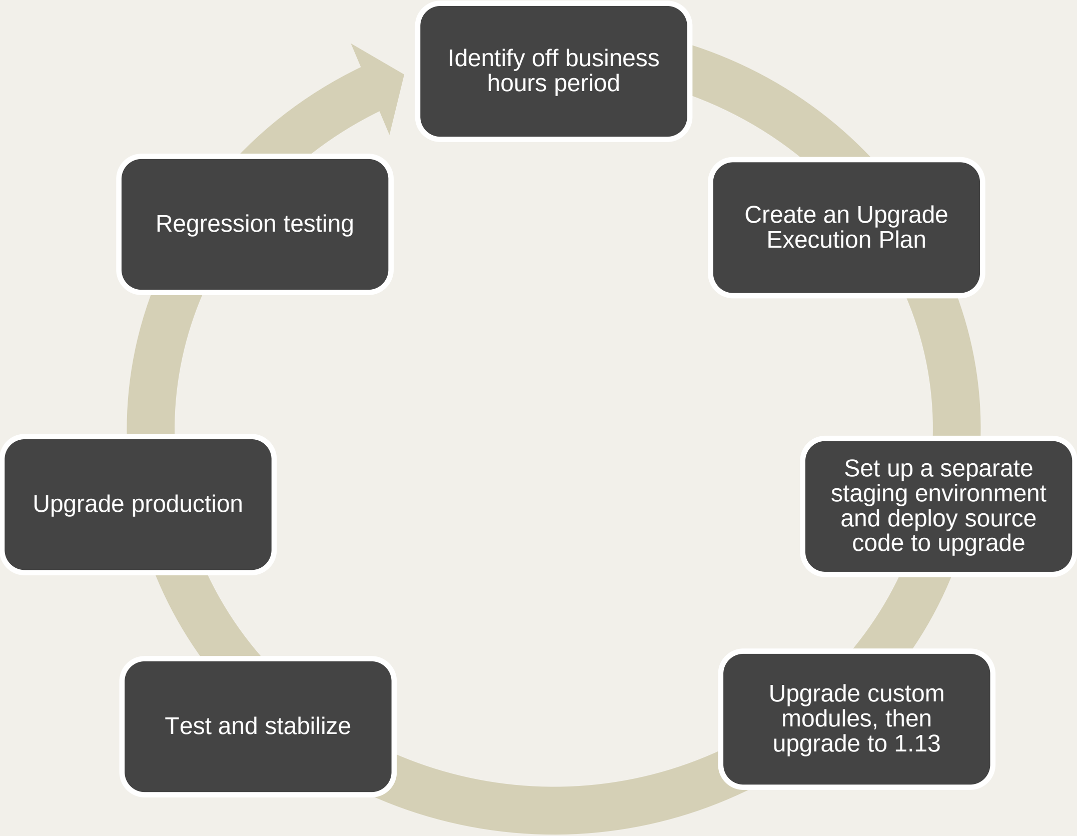
- Currently custom triggers are *not supported* in Magento's database as these can introduce incompatibilities with future Magento versions.

- Familiarize yourself with the potential MySQL trigger limitations described in this article before upgrading http://dev.mysql.com/doc/mysql-reslimits-excerpt/5.1/en/stored-program-restrictions.html.

- If you use MySQL database replication make sure to switch to row-based replication, Magento currently *does not support* MySQL statement-based replication.

- Review the recommendations for MySQL password security outlined in http://dev.mysql.com/doc/refman/5.0/en/password-security-user.html

# Upgrade Implementation



Identify off business hours period

Create an Upgrade Execution Plan

Set up a separate staging environment and deploy source code to upgrade

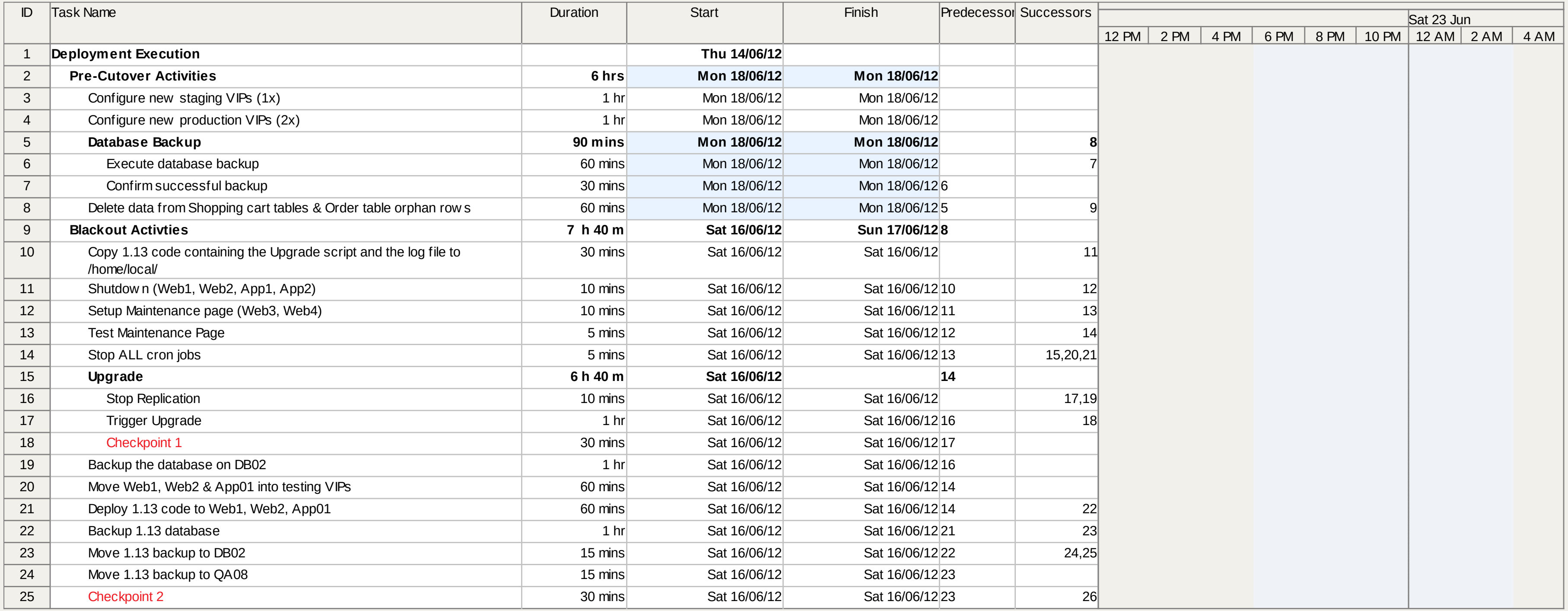
Upgrade custom modules, then upgrade to 1.13

Test and stabilize

Upgrade production

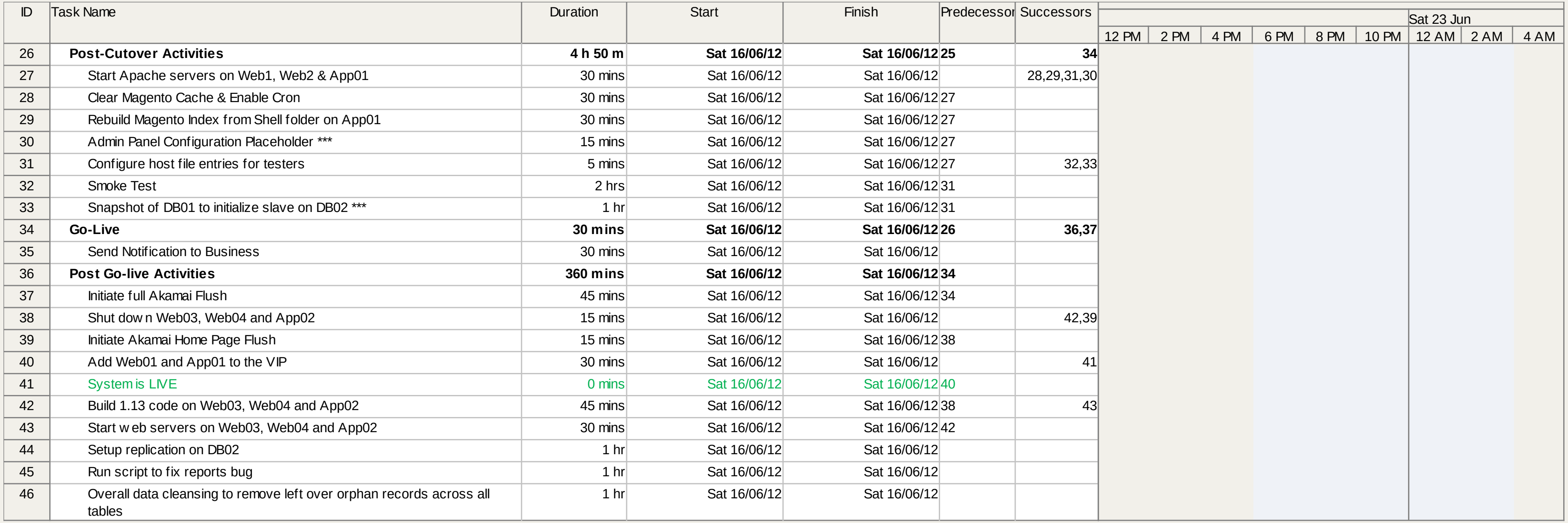
Regression testing

# Upgrade Execution Plan



| ID | Task Name | Duration | Start | Finish | Predecessor | Successors |
|---|---|---|---|---|---|---|
| 1 | **Deployment Execution** | | **Thu 14/06/12** | | | |
| 2 | **Pre-Cutover Activities** | **6 hrs** | **Mon 18/06/12** | **Mon 18/06/12** | | |
| 3 | Configure new staging VIPs (1x) | 1 hr | Mon 18/06/12 | Mon 18/06/12 | | |
| 4 | Configure new production VIPs (2x) | 1 hr | Mon 18/06/12 | Mon 18/06/12 | | |
| 5 | **Database Backup** | **90 mins** | **Mon 18/06/12** | **Mon 18/06/12** | | **8** |
| 6 | Execute database backup | 60 mins | Mon 18/06/12 | Mon 18/06/12 | | 7 |
| 7 | Confirm successful backup | 30 mins | Mon 18/06/12 | Mon 18/06/12 | 6 | |
| 8 | Delete data from Shopping cart tables & Order table orphan rows | 60 mins | Mon 18/06/12 | Mon 18/06/12 | 5 | 9 |
| 9 | **Blackout Activties** | **7 h 40 m** | **Sat 16/06/12** | **Sun 17/06/12** | **8** | |
| 10 | Copy 1.13 code containing the Upgrade script and the log file to /home/local/ | 30 mins | Sat 16/06/12 | Sat 16/06/12 | | 11 |
| 11 | Shutdown (Web1, Web2, App1, App2) | 10 mins | Sat 16/06/12 | Sat 16/06/12 | 10 | 12 |
| 12 | Setup Maintenance page (Web3, Web4) | 10 mins | Sat 16/06/12 | Sat 16/06/12 | 11 | 13 |
| 13 | Test Maintenance Page | 5 mins | Sat 16/06/12 | Sat 16/06/12 | 12 | 14 |
| 14 | Stop ALL cron jobs | 5 mins | Sat 16/06/12 | Sat 16/06/12 | 13 | 15,20,21 |
| 15 | **Upgrade** | **6 h 40 m** | **Sat 16/06/12** | | **14** | |
| 16 | Stop Replication | 10 mins | Sat 16/06/12 | Sat 16/06/12 | | 17,19 |
| 17 | Trigger Upgrade | 1 hr | Sat 16/06/12 | Sat 16/06/12 | 16 | 18 |
| 18 | Checkpoint 1 | 30 mins | Sat 16/06/12 | Sat 16/06/12 | 17 | |
| 19 | Backup the database on DB02 | 1 hr | Sat 16/06/12 | Sat 16/06/12 | 16 | |
| 20 | Move Web1, Web2 & App01 into testing VIPs | 60 mins | Sat 16/06/12 | Sat 16/06/12 | 14 | |
| 21 | Deploy 1.13 code to Web1, Web2, App01 | 60 mins | Sat 16/06/12 | Sat 16/06/12 | 14 | 22 |
| 22 | Backup 1.13 database | 1 hr | Sat 16/06/12 | Sat 16/06/12 | 21 | 23 |
| 23 | Move 1.13 backup to DB02 | 15 mins | Sat 16/06/12 | Sat 16/06/12 | 22 | 24,25 |
| 24 | Move 1.13 backup to QA08 | 15 mins | Sat 16/06/12 | Sat 16/06/12 | 23 | |
| 25 | Checkpoint 2 | 30 mins | Sat 16/06/12 | Sat 16/06/12 | 23 | 26 |

# Upgrade Execution Plan


Sat 23 Jun
12 PM
2 PM
4 PM
6 PM
8 PM
10 PM
12 AM
2 AM
4 AM

| ID | Task Name | Duration | Start | Finish | Predecessor | Successors |
|---|---|---|---|---|---|---|
| 26 | **Post-Cutover Activities** | **4 h 50 m** | **Sat 16/06/12** | **Sat 16/06/12** | **25** | **34** |
| 27 | Start Apache servers on Web1, Web2 & App01 | 30 mins | Sat 16/06/12 | Sat 16/06/12 | | 28,29,31,30 |
| 28 | Clear Magento Cache & Enable Cron | 30 mins | Sat 16/06/12 | Sat 16/06/12 | 27 | |
| 29 | Rebuild Magento Index from Shell folder on App01 | 30 mins | Sat 16/06/12 | Sat 16/06/12 | 27 | |
| 30 | Admin Panel Configuration Placeholder *** | 15 mins | Sat 16/06/12 | Sat 16/06/12 | 27 | |
| 31 | Configure host file entries for testers | 5 mins | Sat 16/06/12 | Sat 16/06/12 | 27 | 32,33 |
| 32 | Smoke Test | 2 hrs | Sat 16/06/12 | Sat 16/06/12 | 31 | |
| 33 | Snapshot of DB01 to initialize slave on DB02 *** | 1 hr | Sat 16/06/12 | Sat 16/06/12 | 31 | |
| 34 | **Go-Live** | **30 mins** | **Sat 16/06/12** | **Sat 16/06/12** | **26** | **36,37** |
| 35 | Send Notification to Business | 30 mins | Sat 16/06/12 | Sat 16/06/12 | | |
| 36 | **Post Go-live Activities** | **360 mins** | **Sat 16/06/12** | **Sat 16/06/12** | **34** | |
| 37 | Initiate full Akamai Flush | 45 mins | Sat 16/06/12 | Sat 16/06/12 | 34 | |
| 38 | Shut down Web03, Web04 and App02 | 15 mins | Sat 16/06/12 | Sat 16/06/12 | | 42,39 |
| 39 | Initiate Akamai Home Page Flush | 15 mins | Sat 16/06/12 | Sat 16/06/12 | 38 | |
| 40 | Add Web01 and App01 to the VIP | 30 mins | Sat 16/06/12 | Sat 16/06/12 | | 41 |
| 41 | System is LIVE | 0 mins | Sat 16/06/12 | Sat 16/06/12 | 40 | |
| 42 | Build 1.13 code on Web03, Web04 and App02 | 45 mins | Sat 16/06/12 | Sat 16/06/12 | 38 | 43 |
| 43 | Start web servers on Web03, Web04 and App02 | 30 mins | Sat 16/06/12 | Sat 16/06/12 | 42 | |
| 44 | Setup replication on DB02 | 1 hr | Sat 16/06/12 | Sat 16/06/12 | | |
| 45 | Run script to fix reports bug | 1 hr | Sat 16/06/12 | Sat 16/06/12 | | |
| 46 | Overall data cleansing to remove left over orphan records across all tables | 1 hr | Sat 16/06/12 | Sat 16/06/12 | | |

# Version Specific Upgrade Path

**Upgrade paths to follow:**

Enterprise Edition 1.7 or earlier → EE 1.12 → EE 1.13

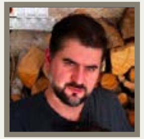
Enterprise Edition 1.8 or later → EE 1.13

# Q&A

# The presenters

## Magento Expert Consulting Group

Magento EC^g



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