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Implementing Oracle ATG and Oracle Endeca to Drive Commerce Sites

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Agenda

- Introduction
- Indexing
- Searching
- Conclusion

Introduction



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Overview

- This presentation highlights new features intended to simplify indexing and navigation on your ATG/Endeca powered site.
- It's not a deep introduction into Experience Manager.
- Assume familiarity with ATG, basic familiarity with Endeca.

Required Versions

ATG and Endeca Versions

- ATG Web Commerce **10.1.1**
- Endeca Experience Manager **3.1**



Navigation

Dimensions for Price, Width, Height

Refine your search by clicking on the options below:

Price

- 0.00-2.00 (10)
- 4.00-6.00 (6)
- 6.00-8.00 (17)
- 8.00-10.00 (50)
- 10.00-12.00 (9)
- 12.00-14.00 (471)
- 14.00-19.99 (181)

Edition

- 2012 (744)

Width

- 0.00-2.00 (1)
- 2.00-4.00 (44)
- 4.00-6.00 (252)
- 6.00-8.00 (317)
- 8.00-10.00 (7)
- 10.00-12.00 (11)
- 12.00-14.00 (17)
- 14.00-22.00 (91)

Height

- 0.00-2.00 (1)
- 2.00-4.00 (44)
- 4.00-6.00 (333)
- 6.00-8.00 (190)
- 8.00-10.00 (47)
- 10.00-12.00 (13)
- 12.00-14.00 (9)
- 14.00-26.25 (103)

				
The Onion News Blackout 2012 Desk...	Dog 2012 Gallery Desk Calendar	Detroit Lions 2012 Desk Pad	Jacksonville Jaguars 2012 Desk Pad	Cincinnati Bengals 2012 Desk Pad
Our Price \$12.99	Our Price \$15.99	Our Price \$13.99	Our Price \$13.99	Our Price \$13.99
MORE INFO	MORE INFO	MORE INFO	MORE INFO	MORE INFO
ADD TO CART	ADD TO CART	ADD TO CART	ADD TO CART	ADD TO CART
				
Symbols 2012 Desk Calendar	Nostalgic Views of Chicago 2012 E...	Nostalgic Views of Austin 2012 Ea...	Nostalgic Views of Seattle 2012 E...	Oregon Football 2012 Desk Calendar

Navigation Example

Gift Shop | Women | Men | Shoes | Home Accents | New Items

Your Selections
"shoes" X

Sort by: Top Picks

Category

Women's Shoes (4)
Men's Shoes (2)

Price

\$0 - \$500

Size

5 (2)
6 (3)
7 (4)
8 (6)
9 (6)
10 (6)
11 (4)
12 (4)

Color

Black (2)
Blue (1)
Brown (2)
Green (1)
Red (1)

Feature

Leather (2)

6 Results for: shoes

 [Classic Flip Flop](#)
~~\$49.99~~ was \$88.00

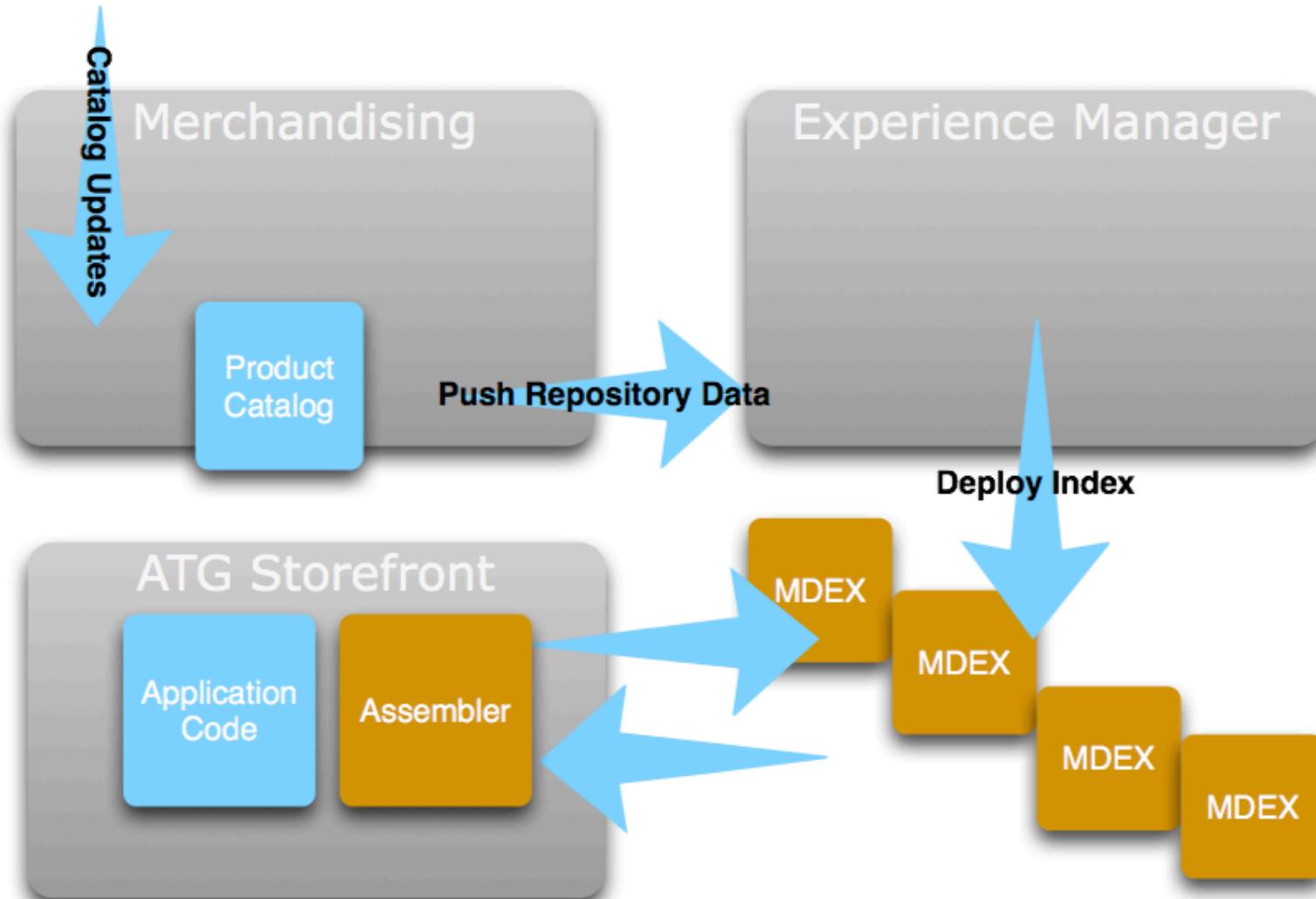
 [Leather Toecap](#)
~~\$150.00~~

 [Leather Oxford](#)
~~\$140.00~~ was \$200.00

 [Classy Slingback](#)
~~\$108.00~~

 [Peep Toe Pump](#)
~~\$88.00~~ was \$110.00

 [Comfort Sneaker](#)
~~\$130.00~~



ATG Modules

- **DAF.EndecaAssembler**
 - Used for searching on the production server
- **DCS.Endeca.Index**
 - Contains configuration and libraries for indexing ATG Repository content to Endeca
- **DCS.Endeca.Index.Versioned**
 - Same as above, used when indexing versioned repositories
- **Store.Endeca.Index**
 - CRS specific configuration for indexing

ATG Repositories

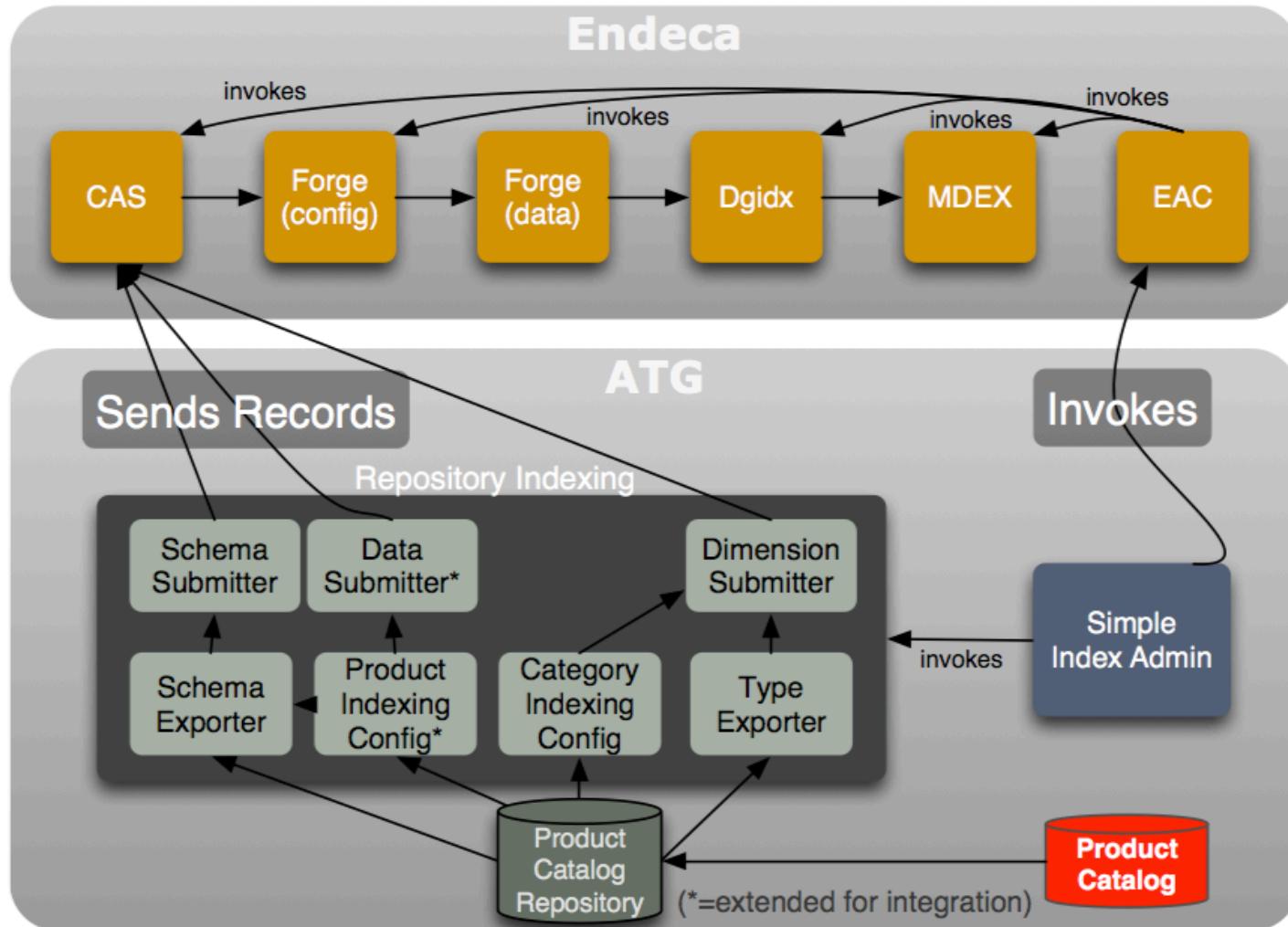
Overview

- Generically represents data stores with metadata, such as LDAP, but also enterprise apps such as CRM, ERP
- Invented
 - to make it possible build applications and UIs without foreknowledge of the customer's schemas
 - to enable data-driven publications of content via business rules
- Most commonly used as an Object-Relational Mapping (ORM) system
 - Dynamic typing
 - Abstracts location and type of data store
 - Generates accessor objects and automated caching
- OOTB Support for Indexing Repository contents to Endeca

Indexing



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Data Export

Basic Functionality

- Exports catalog data records at product or SKU level
- Exports hierarchical dimensions
 - Catalog/category hierarchy as a dimension
 - Product catalog type hierarchy as a dimension
- Exports baseline catalog schema
 - Basic “starter” schema based on IndexingOutputConfig

Endeca Processes

Indexing

- **dgidx**: the C++ indexer that indexes data to produce an MDEX
- **dgraph** (“MDEX Engine”): the C++ process that provides query/browse results. Serves up an MDEX.
- **CAS** (“Content Acquisition System”): newer ETL tool that also provides persistent data record stores.
- **Forge**: older, still used, ETL tool
- **EAC** (Endeca Application Control): process manager

ATG Components

Indexing

- **Product Indexing Config** – (IOC) Defines mapping from repository to Endeca
- **Category Indexing Config** – Generates **product.category** dimension
- **Schema Exporter** – Generates Endeca schema given an IOC
- **Repository Type Exporter** – Exports repository item type as a hierarchy, ex:
Product->ElectronicProduct->TelevisionProduct

Endeca Repository Indexing

EndecaIndexingOutputConfig Definition File

- XML combined file that specifies the hierarchy of repository items and their properties to index
- Begins with a top-level “item” tag specifying repository and item descriptor name
- Nested “property” tags specify individual properties to index
- Nested “item” tags specify item properties to index (and contain “property” tags, in turn)

Indexing

EndeCalIndexingOutputConfig Example Definition File

```
<item is-document="true" item-descriptor-name="product">
  <title property-name="displayName"/>
  <properties>
    <property name="$docId" type="string" output-name="record.spec"/>
    <property name="displayName" text-searchable="true"/>
    <property name="description" text-searchable="true"/>
    <property name="dateAvailable" type="date"/>
    <property name="brand" text-searchable="true" is-dimension="true" type="string"/>
  </properties>

  <item is-multi="true" property-name="childSKUs">
    <properties>
      <property filter="unique" name="description" text-searchable="true"/>
      <property filter="unique" name="displayName" text-searchable="true"/>
      <property filter="unique" name="quantity" type="integer"/>
    </properties>
  </item>
</item>
```



Simple Indexing Admin

Indexing Job Status

Started: Feb 20, 2012 4:29:44 PM

Finished: Feb 20, 2012 4:31:25 PM

Duration: 0:01:40

Phase	Component	Records Sent	Records Failed	Status
PreIndexing (Duration: 0:00:00)				
	/atg/endeca/index/commerce/CategoryTreeService			COMPLETE (Succeeded)
RepositoryExport (Duration: 0:00:22)				
	/atg/endeca/index/commerce/SchemaExporter	62	0	COMPLETE (Succeeded)
	/atg/endeca/index/commerce/CategoryToDimensionOutputConfig	92	0	COMPLETE (Succeeded)
	/atg/endeca/index/commerce/RepositoryTypeDimensionExporter	13	0	COMPLETE (Succeeded)
	/atg/commerce/search/ProductCatalogOutputConfig	308	0	COMPLETE (Succeeded)
EndecaIndexing (Duration: 0:01:18)				
	/atg/endeca/index/commerce/EndecaScriptService			COMPLETE (Succeeded)
Actions: Baseline Index Partial Index				

Auto Refresh

/atg/endeca/index/commerce/ProductCatalogSimpleIndexingAdmin

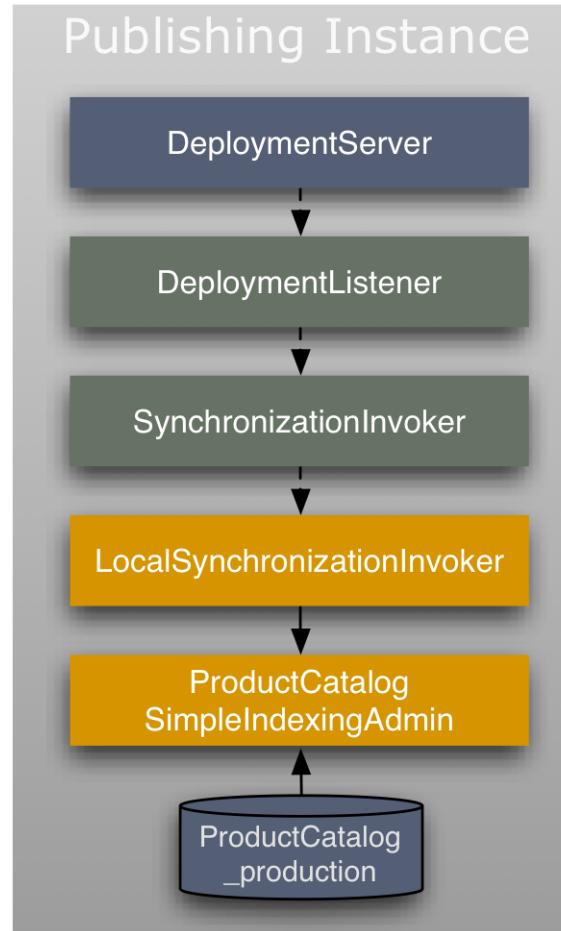
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Merchandising and Indexing

- By default, listens to changes on ***ProductCatalog_production*** repository, configured on the Merchandising server.
- Listening is done by the **DeploymentListener** component.
- Changes are sent to **CAS** for indexing by **MDEX**.
- Indexing on **Production** is recommended because often not all data required for indexing is available on Merchandising server.
 - Price information
 - Inventory
 - etc...

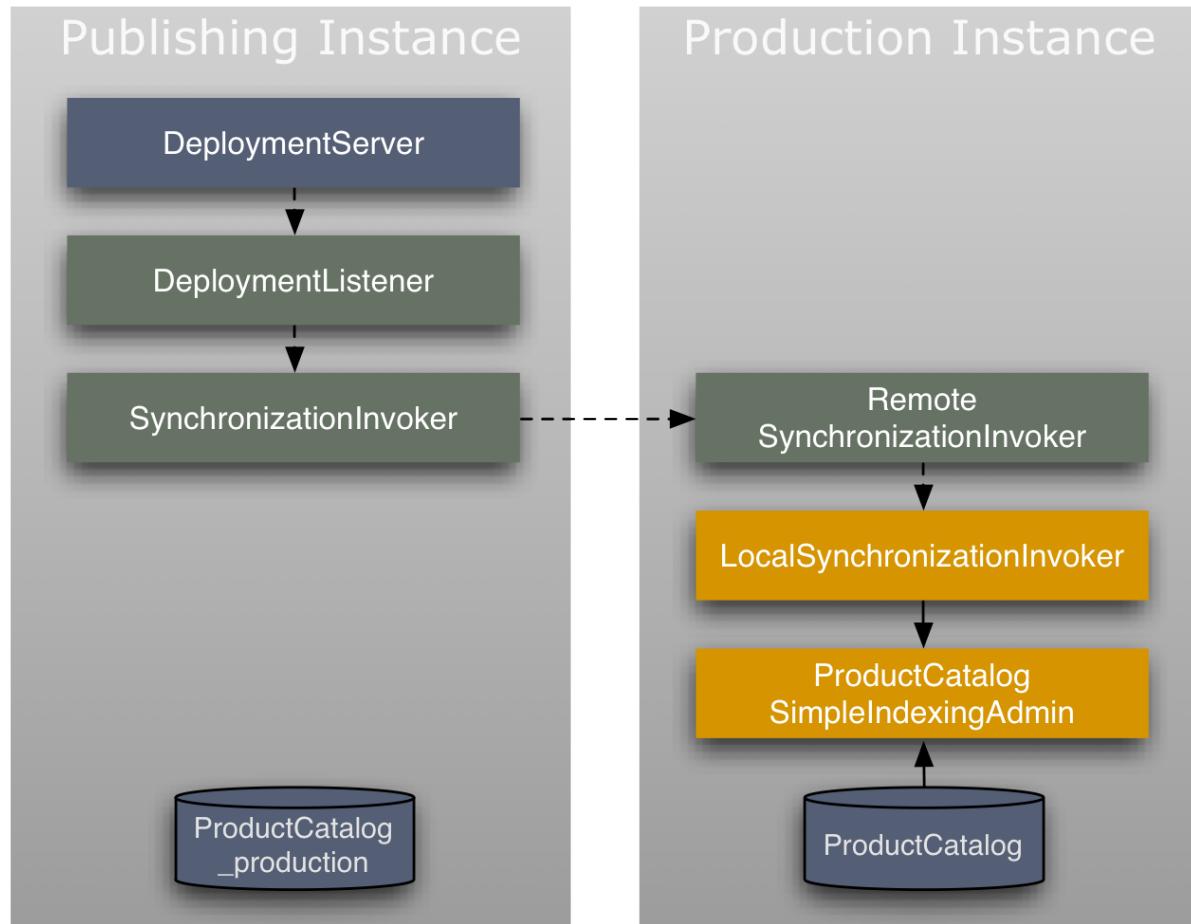
Deployment Listener

Default Configuration



Deployment Listener

Production Configuration



Searching



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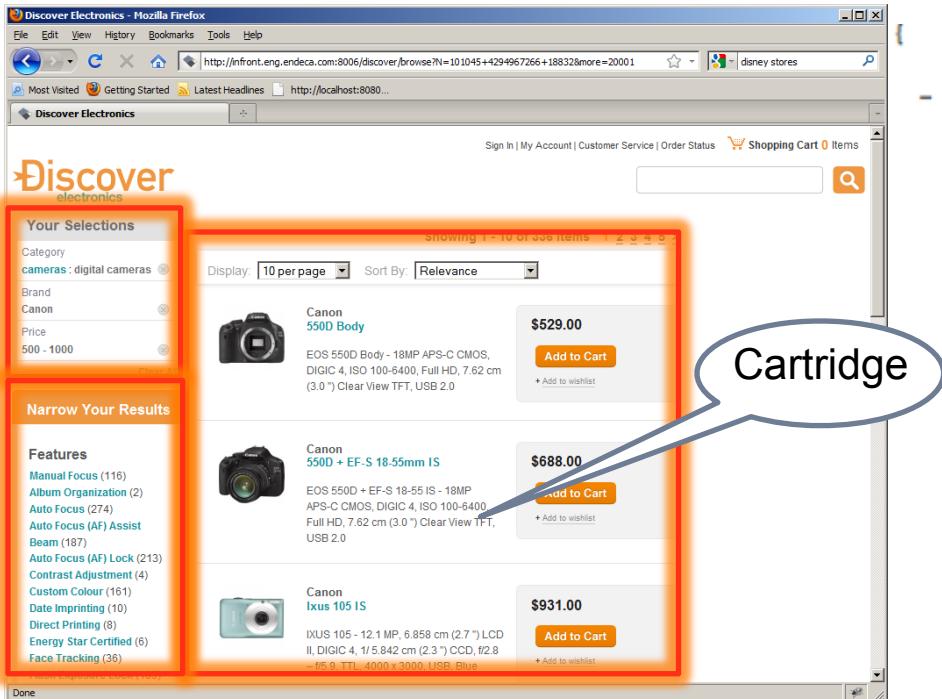
Searching

The Assembler

- Searching is done via invocation of the Endeca Assembler
- Assembler returns a hierarchy of content JavaBeans (“ContentItems”) built by one or more Endeca “cartridges”
- Results are then rendered by JSP pages, or serialized to JSON or XML for client-side rendering
- JSON useful for javascript/ajax or mobile rendering.

Assembler

Overview



Cartridge

Response Data

```
@type: "ContentSlot",
- contents: [
  - {
    @type: "ThreeColumnNavigationPage",
    name: "Default Page",
    title: "Discover Electronics",
    metaKeywords: "camera cameras electronics",
    metaDescription: "Endeca eBusiness reference application",
    + header: [ ... ],
    - leftColumn: [
      - {
        @type: "Breadcrumbs",
        removeAllAction: "/browse?format=json",
        - refinementCrumbs: [
          - {
            ...
```

Experience Manager

Simple configuration

The screenshot shows the Oracle Experience Manager interface. On the left, there is a navigation sidebar with the following structure:

- Pages
 - browse (selected)
 - mobile
- Content
 - Mobile
 - Shared
 - Global Search Configuration
 - Guided Navigation
 - Results List
 - Web

The main panel is titled "Pages > browse". It contains a "Page Summary" section with fields for "Name / URL" (set to "browse") and "Template" (set to "PageSlot"). There is also a "Select Template" button. Below this is a tabbed "Content Editor" and "XML View" section, with "XML View" currently selected. Under "Section Settings", the following configuration is shown:

Section Type	Page
Cartridge	PageSlot
Name	Static Page Slot
Content Type	Page
Content Collection	/content/Web/Web Browse Pages
Rule Limit	1

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Searching

ATG Assembler Integration

- Invokes the assembler using the current URL
 - Example: **mystore.com/browse/electronics/**
- If a valid ContentItem is returned by the Assembler, either dispatches to a rendering page (as returned by ContentItemToRendererPath) or serializes as JSON/XML
- If no valid ContentItem was returned, passes the request down the Servlet pipeline.

Searching

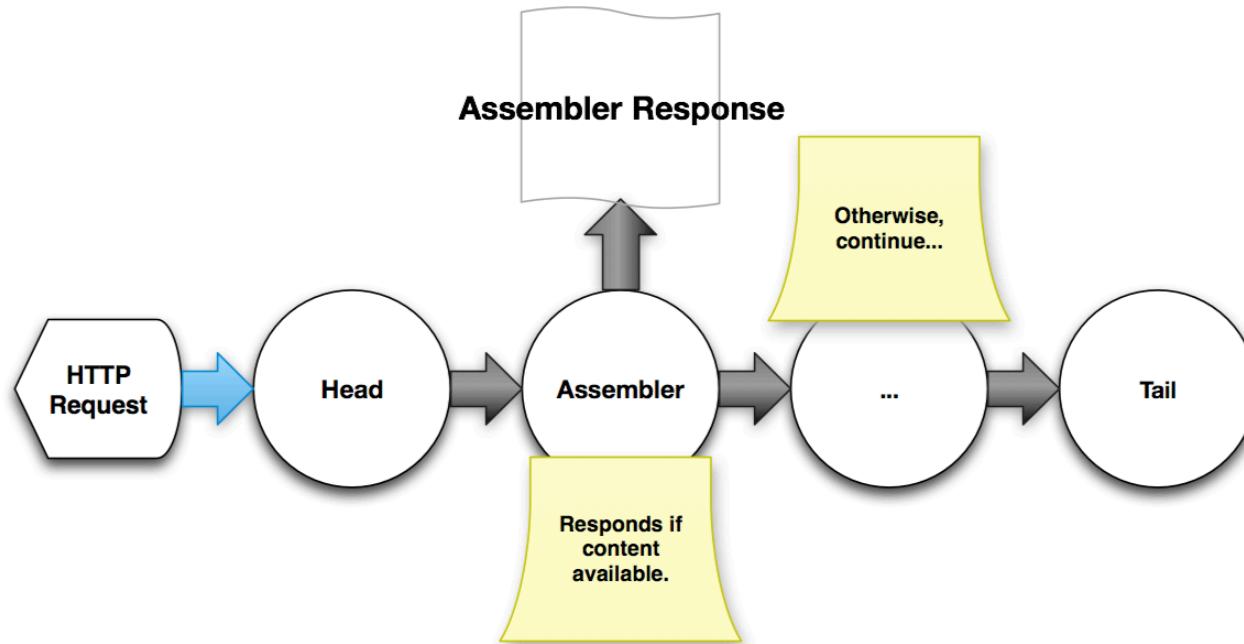
ATG Assembler Integration

ATG provides several facilities for use with the assembler

- **AssemblerPipelineServlet**: Part of the ATG servlet pipeline that invokes the assembler and dispatches to a renderer
- **ContentItemToRendererPath**: A component that builds a path to a JSP renderer for a content item
- **InvokeAssembler**: Droplet for invoking assembler on a JSP page
- **dsp:renderContentItem**: A JSP tag that takes a ContentItem and dispatches to its rendering JSP page, or serializes it as JSON or XML

ATG Request Pipeline

Assembler in the pipeline



Searching

When to use pipeline servlet vs droplet

Given two ways to invoke the assembler, when to use which:

- **AssemblerPipelineServlet**: used to render an Endeca driven page based on the current request URL
 - Use when the entire page represents the output of the assembler
 - Use when creating an assembler-based page from scratch
- **InvokeAssembler**: used to invoke the assembler on a JSP page
 - Use when adding some assembler content to an existing traditional JSP page
 - Use sparingly, to minimize the number of assembler and MDEX requests

InvokeAssembler Droplet

- Allows invocation of the Assembler from a JSP page
- Takes one of the following input parameters:
 - **includePath** – Path to an experience manager “page” (or sub-page), passed in as an Endeca ContentInclude
 - **contentItemType** – content type to be invoked, passed in as an Endeca BasicContentItem (can additionally specify “ruleLimit”)
 - **contentCollection** – name of the Endeca ContentCollection (“slot”) to be invoked, passed to the assembler as a BasicContentItem
- Renders “output” OPARAM (that, in practice will often contain a `dsp:renderContentItem`)

dsp:renderContentItem

jsp tagß

- A DSP taglib JSP tag that renders a **ContentItem** using the same logic as the **AssemblerPipelineServlet**
- Attributes
 - contentItem
 - format (optional) json or xml
- If format is XML or JSON, serializes to XML or JSON
- Otherwise, updates the **contentItem** request attribute, and dispatches to the page returned by **ContentItemToRendererPath**

```
<dsp:renderContentItem contentItem="${contentItem}" />
```

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Example JSP

```
<dsp:droplet name="InvokeAssembler">
  <dsp:param name="includePath" value="/pages/browse"/>
  <dsp:oparam name="output">
    <dsp:getvalueof var="contentItem" vartype="com.endeca.infront.assembler.ContentItem" param="contentItem" />
  </dsp:oparam>
</dsp:droplet>

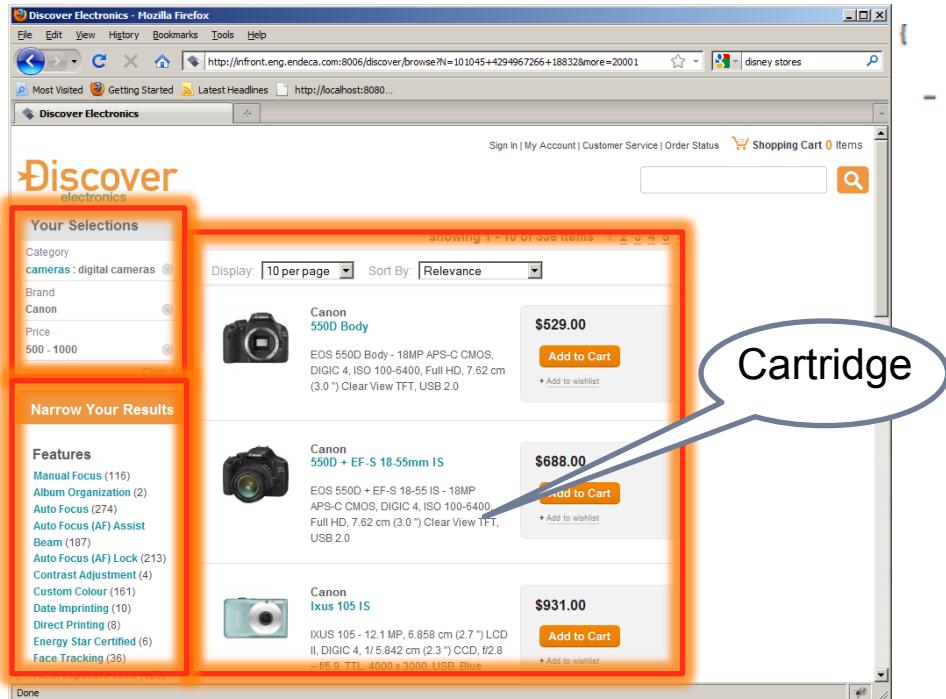
<%-- 
  This is how the Guided Search content can be retrieved using the
  InvokeAssembler droplet.
--%>

<dsp:droplet name="InvokeAssembler">
  <dsp:param name="includePath" value="/services/guidedsearch"/>
  <dsp:oparam name="output">
    <dsp:getvalueof var="contentItem" vartype="com.endeca.infront.assembler.ContentItem" param="contentItem" />
  </dsp:oparam>
</dsp:droplet>

<dsp:renderContentItem contentItem="${contentItem}" />
```

Assembler

Overview - Reminder



Cartridge

```
@type: "ContentSlot",
- contents: [
  - {
    @type: "ThreeColumnNavigationPage",
    name: "Default Page",
    title: "Discover Electronics",
    metaKeywords: "camera cameras electronics",
    metaDescription: "Endeca eBusiness reference ap
+ header: [ ... ],
- leftColumn: [
  - {
    @type: "Breadcrumbs",
    removeAllAction: "/browse?format=json",
- refinementCrumbs: [
  - {
```

Response Data

JSON Response

```
{  
  "@type": "PageSlot",  
  "name": "Static Page Slot",  
  "contentCollection": "\content\Web\Web Browse Pages",  
  "ruleLimit": "1",  
  "endeca:siteRootPath": "\pages",  
  "endeca:contentPath": "\browse",  
  "contents": [{}  
    "@type": "TwoColumnPage",  
    "name": "Two-Column Page",  
    "header": []  
    ,  
    "main": [{}  
      "@type": "ContentSlot-Main",  
      "name": "Results List",  
      "contentCollection": "\content\Shared\Results List",  
      "ruleLimit": "1",  
      "contents": [{}  
        "@type": "ResultsList",  
        "totalNumRecs": 7,
```

Conclusion



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Progress

Ideas for future ATG Endeca integration improvements

- Endeca integrated CommerceReferenceStore
- Expanded platform support for handling of multiple sites, catalogs and pricelists
- Example cartridges that invoke ATG functionality

Wrap Up

- ATG Endeca Integration supports repository indexing and navigation using ATG and Endeca
- Indexing services available to map data and schema from ATG repositories to Endeca's MDEX
- Navigation accomplished using the Endeca Assembler
 - Called from ATG pipeline or Droplet

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