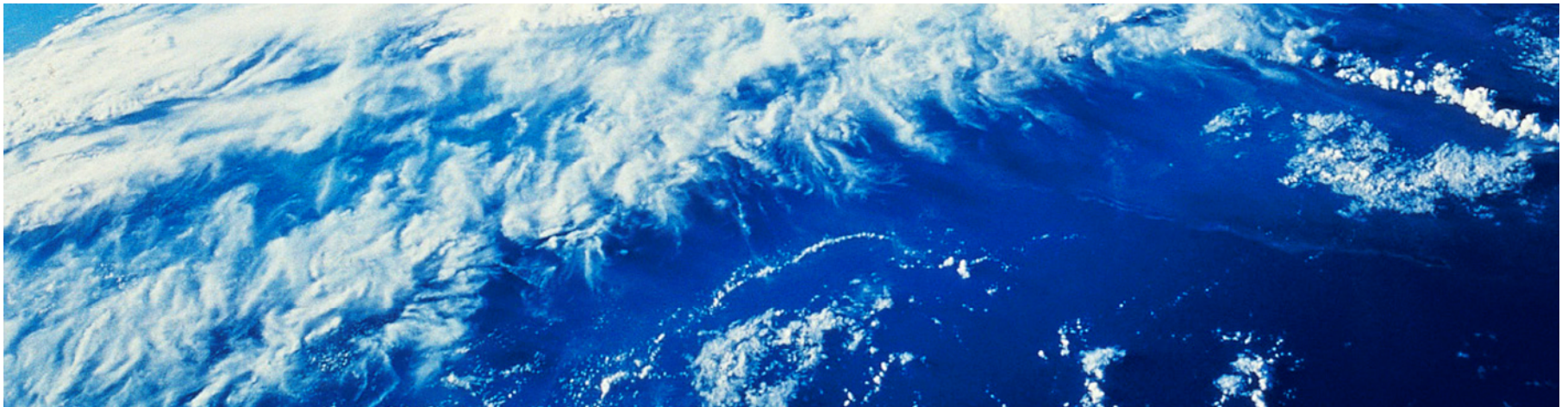


IBM WebSphere Commerce V7 FEP8

WebSphere Commerce Search



Agenda

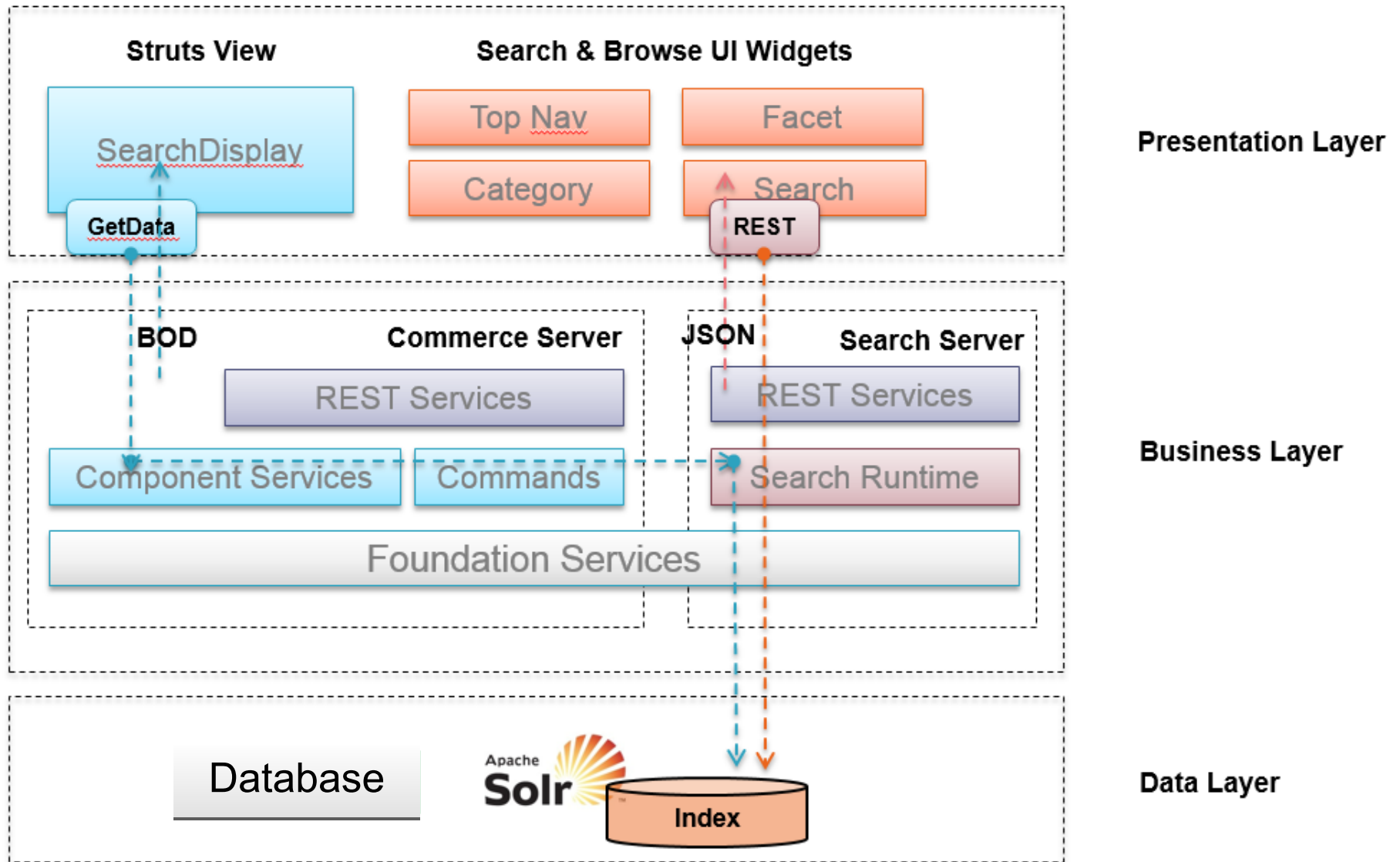
- FEP 7 architecture review
 - Runtime architecture
 - Deployment topology

- Architecture update
 - Price indexing and facets
 - Parallel preprocessing and distributed indexing

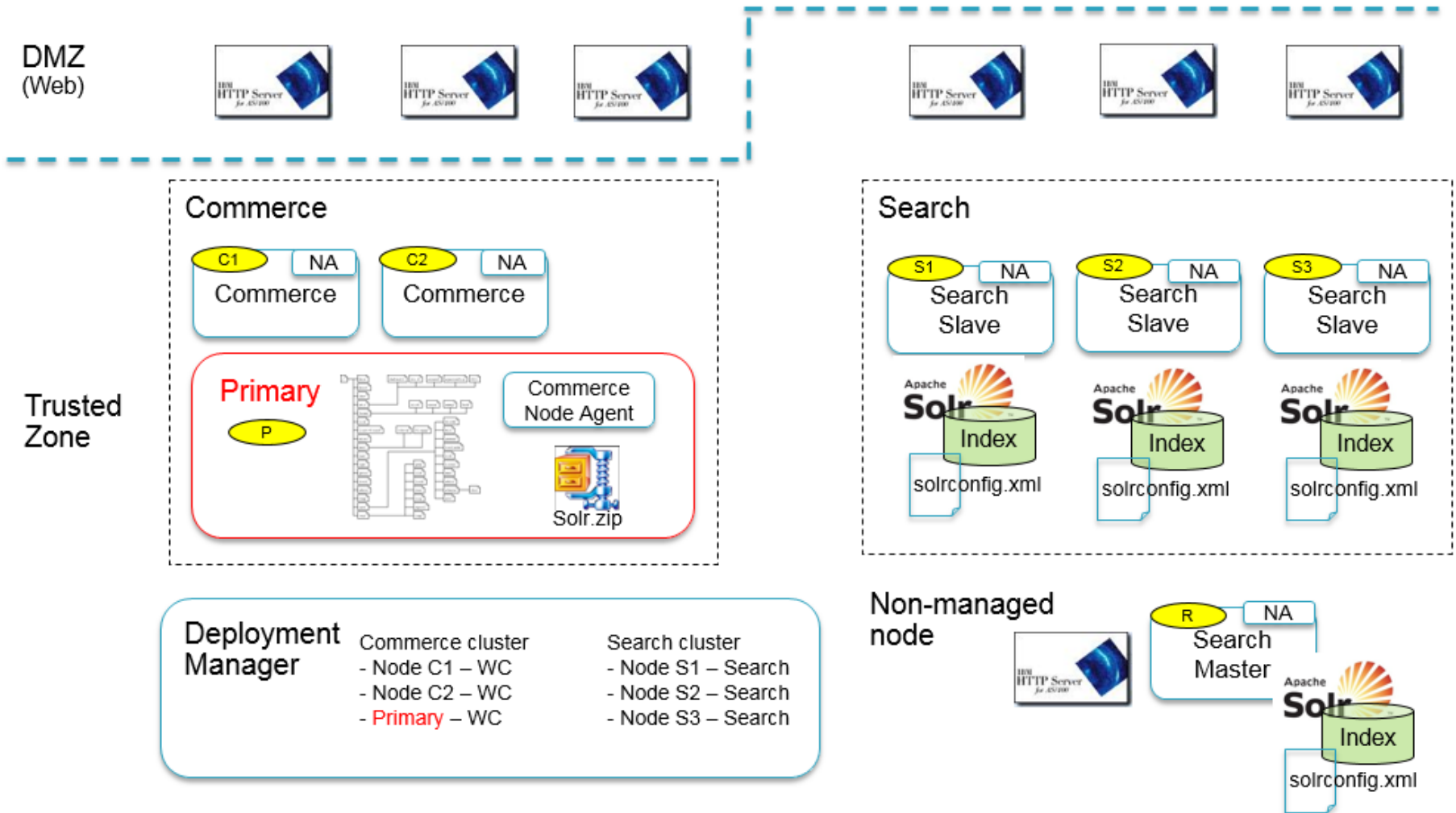
- Feature update
 - Rule-based sales categories
 - Search relevancy enhancements
 - Result grouping
 - Starter store enhancements
 - Auto-suggest

- Deployment update
 - Service logger and Admin logger
 - Solr 4.7 software stack

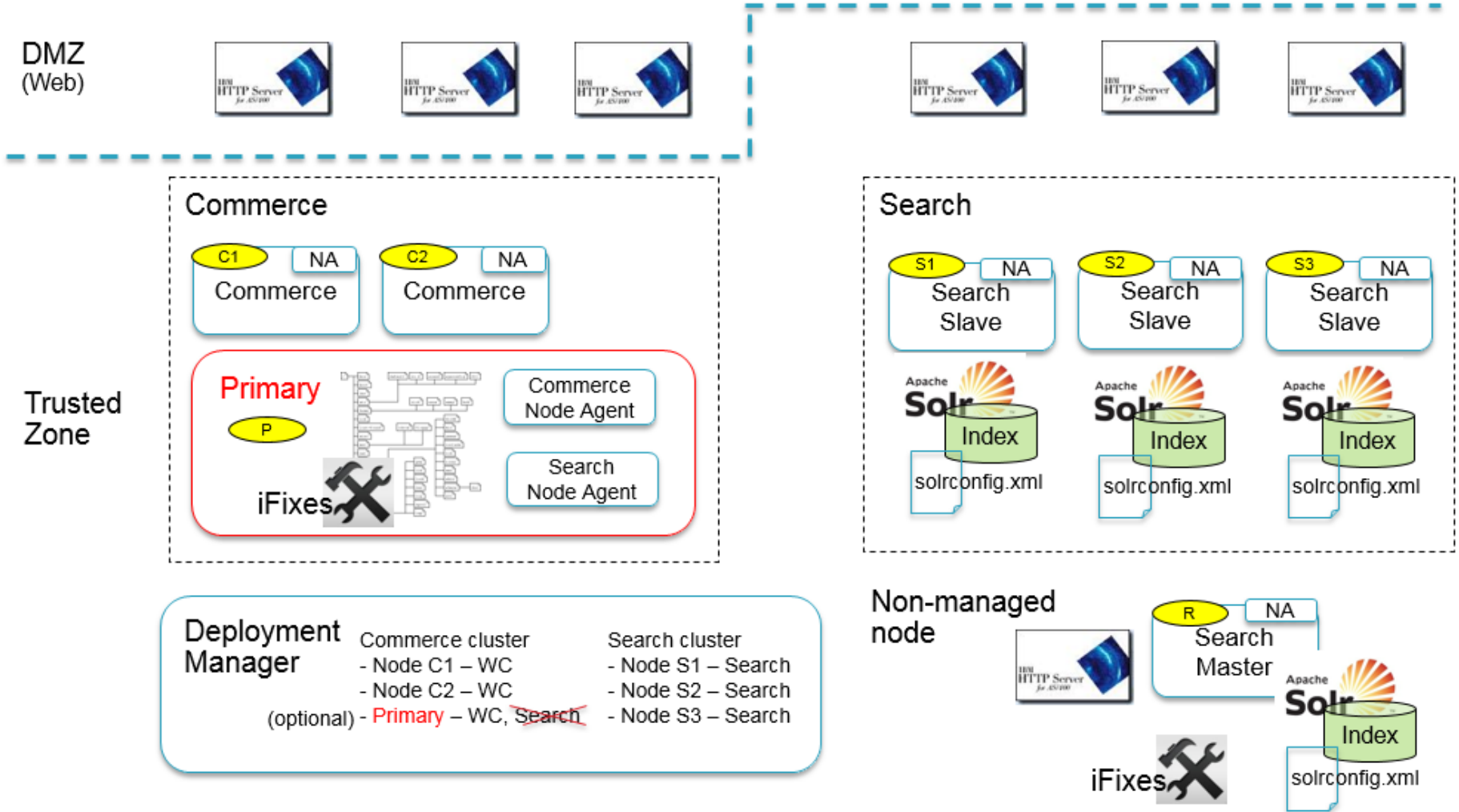
FEP 7/8 Search interaction flow at storefront



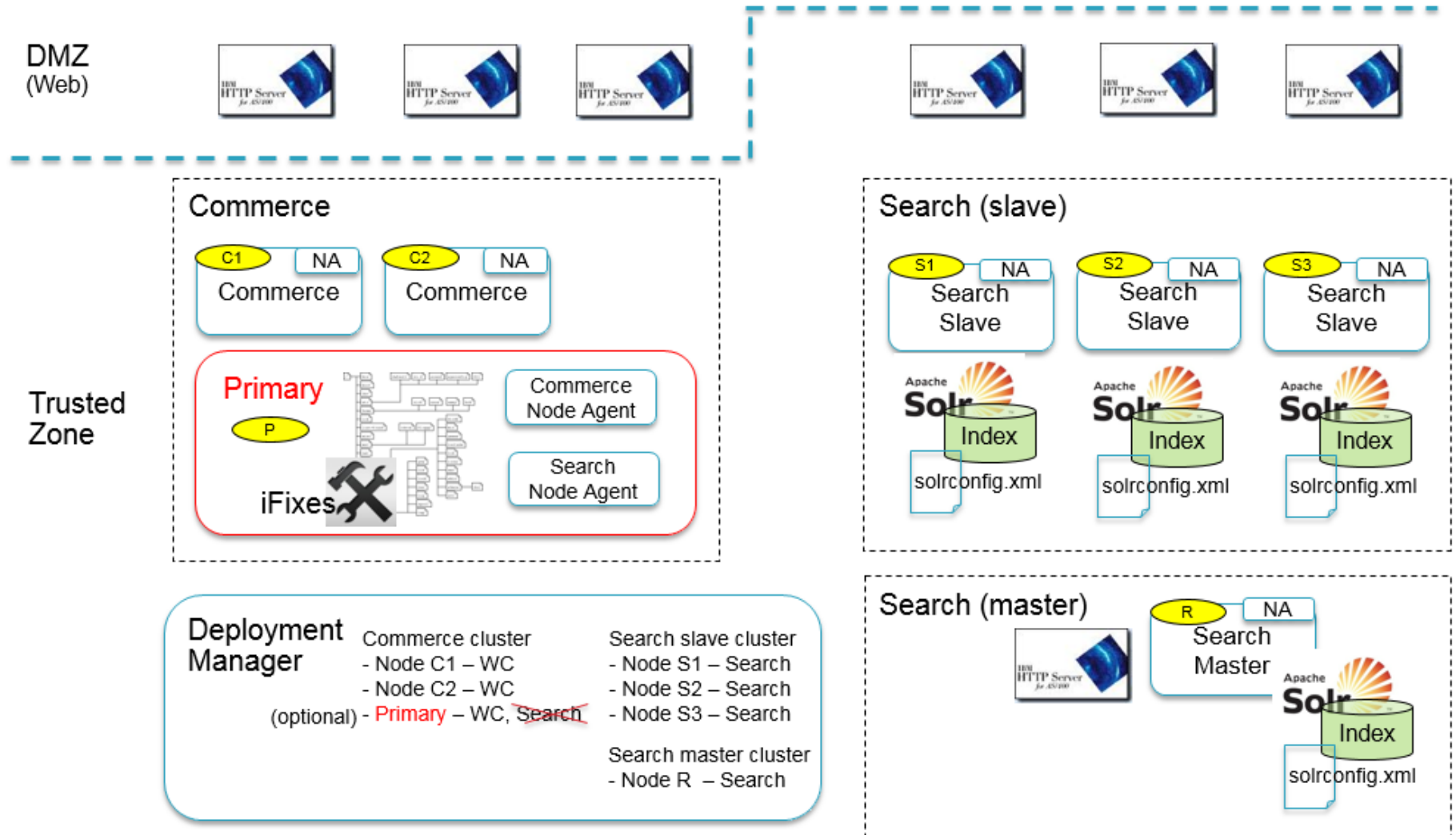
Pre-FEP 7 Search deployment



FEP 7/8 Search deployment – compatibility



FEP 7/8 Search deployment – managed repeater



B2B and E-Site price indexing and facets

▪ Strategy

- Small to medium size contracts (< 1000 contracts)
 - Out-of-the-box B2B price index
 - Append to existing Product index
 - Each contract based price list is modeled as a dynamic index column
 - Store level price override can be achieved using a store level price list
- Enterprise size contracts
 - Custom implementation using separate price index
 - Post GM tutorial to demonstrate how

▪ Technique

- Run scheduler or a utility on WC to preprocess price data into temporary table
 - Instead of pulling on demand which tends to be not effective
 - Preprocess component data at its own pace into temporary table and have others to read from it. This way, data is always available, just the question of “how accurate”
- Two approaches for preprocessing – full recalculation, or white list

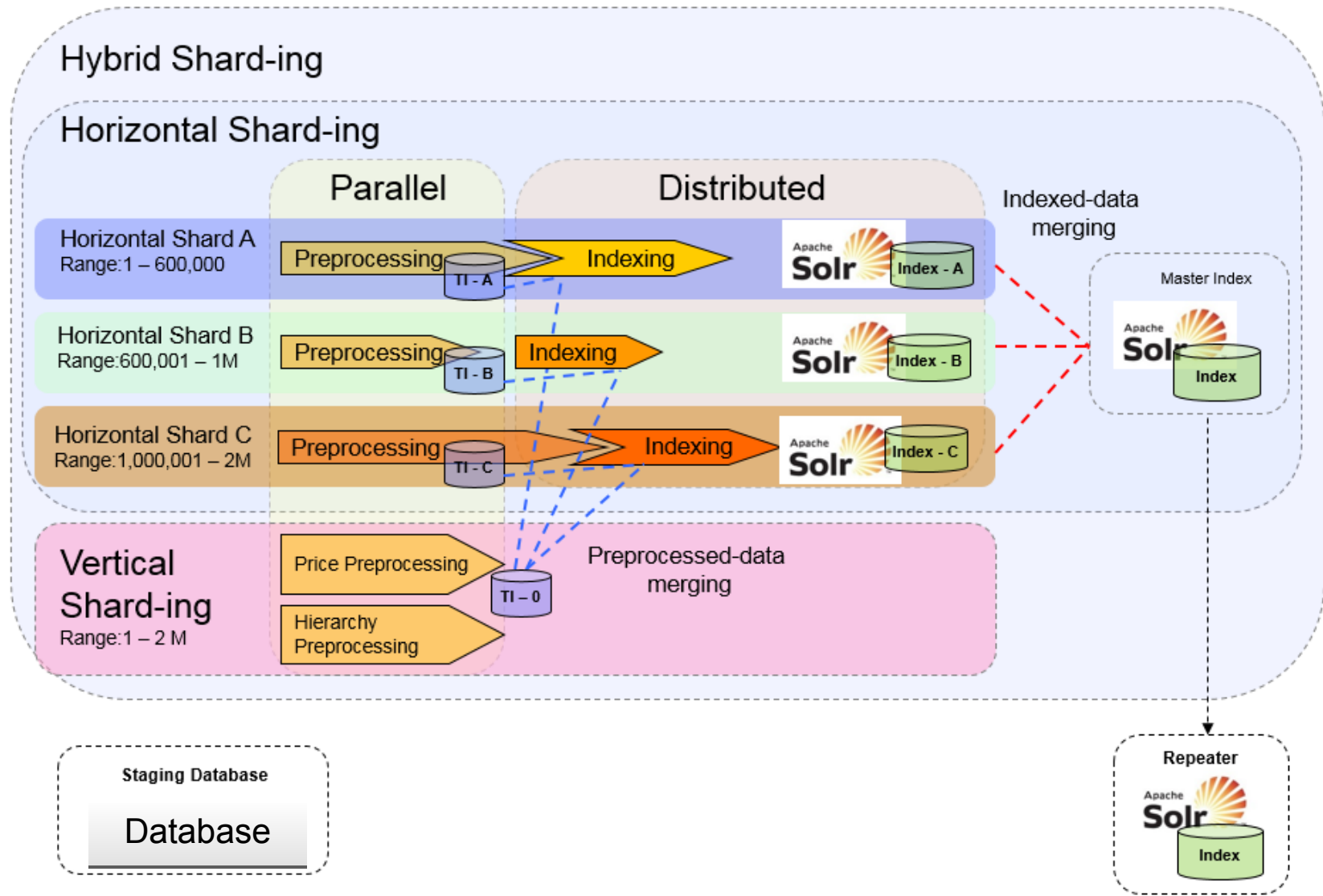
▪ Assumption

- Only one active contract for navigation (browsing, faceting, sorting)
- Contract based price is calculated based on quantity of one item

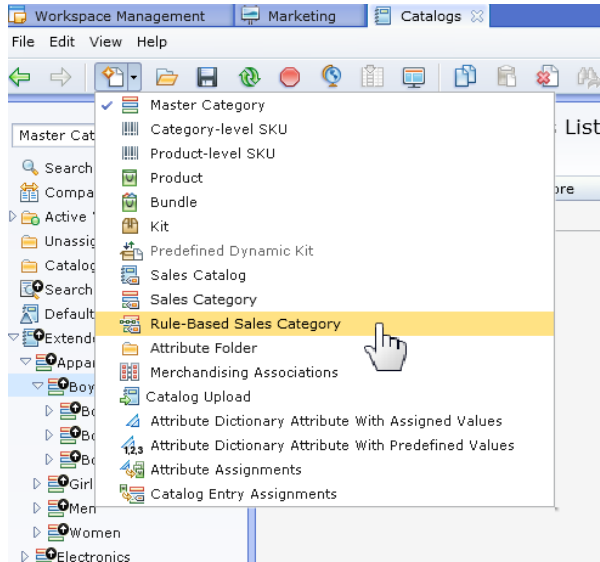
▪ Restriction

- B2B prices shown in store preview are only from approved content.
- Future prices can be previewed provided that the appropriate future contract is indexed.
- Cannot index dynamic price conditions, such as customer segment, date time condition, but can still display using Price API and therefore cannot facet and sort against calculated price

Parallel preprocessing and distributed indexing



Rule based sales category



***New Rule-Based Sales Category** Save

Specify a value for the Code field.

Manage Category | **Rule** | Search Engine Optimization | Associated Assets

Search conditions for finding catalog entries to automatically assign to this category

Use search filters, sort criteria, and other options to create a rule for automatically assigning catalog entries to this category. When you click **Save**, catalog entries that match this rule are automatically assigned to this category. After reloading the properties view, the assigned catalog entries will display in the **Assigned** tab.

Search filters * Matching rule * Value

<input checked="" type="checkbox"/> Property		
<input type="checkbox"/> Attribute Dictionary Attributes		
<input type="checkbox"/> Category		
<input type="checkbox"/> Sales Category		

Sort criteria * Type * Order by * Sequence

0 of 0 selected		

Maximum number of catalog entries to assign to category

Add specific catalog entries to this category

Display option Before catalog entries that match the search conditions
 After catalog entries that match the search conditions

Catalog entries * Type Store * Code Name Short Description

0 of 0 selected				

Search relevancy enhancement – result grouping

- Grouping
 - Group by parent product
 - Search SKU return product
 - Include only available SKUs / attributes
 - Sort by relevancy
 - SKU price range (for navigation)

- Hero product
 - Use name, image, price of most relevant hit
 - Use search rule to boost hero item
 - Use tag to pick hero item

The screenshot shows the Aurora e-commerce website interface. At the top, there's a navigation bar with categories like Apparel, Electronics, Grocery, Health, Home & Furnishing, Newsletters & Magazines, and All Departments. A search bar contains the text "red dress". Below the navigation bar, there are promotional banners: "SAVE 20% on all New Arrivals" and "RECEIVE 15% OFF Your Entire Purchase".

The main content area is titled "Search results for 'red dress' (14 matches.)". On the left, there are several filter sections:

- Category:** Apparel (14), Women (14), Dresses (14)
- Filter by:**
 - Color:** A red circle icon with "(14)" below it.
 - Available Sizes:** M (14), XL (14), S (12), XS (12), L (10), and 2XL (5).
 - PRICE:** Less than \$100 (12), Between \$200 and \$300 (2), and a price range selector.
 - BRAND:** Versati (4), Guaso (3), Heritage Collection (2), Luigi Valenti (2), and Albini (1).

The search results are displayed in a grid format. The top row shows five dresses with their names, prices, and "COMPARE" buttons. The bottom row shows another five dresses with similar information. The products listed include:

- Albini Sleeveless Slip Dress (\$60.00)
- Guaso Casual Wool Dress (\$60.00)
- Luigi Valenti Sleeveless Slip Dress (\$60.00)
- Heritage Knit Cocktail Dress (\$250.00)
- Heritage Fit and Flare Dress (\$100.00)
- Heritage Pencil Cocktail Dress (\$100.00)
- Guaso Silk Evening Dress (\$250.00)
- Guaso Sleeveless Sequined Dress (\$100.00)
- Versati Plaid Party Dress (\$60.00)
- Luigi Valenti Strapless Cocktail Dress (\$100.00)

Search relevancy enhancement – result grouping w/ hero feature

Browsing

```
<!--
  This profile inherits all the elements defined in the IBM_findProductsB
-->
<_config:profile name="IBM_findProductsByCategory_grouping" extends="IBM_fi
  <_config:query inherits="true" override="postprocessor">
    <!-- When QueryMissingGroupOwner is set, and the productBean is not amo
    <_config:param name="QueryMissingGroupOwner" value="true"/>
    <_config:preprocessor classname="com.ibm.commerce.foundation.server
    <_config:postprocessor classname="com.ibm.commerce.foundation.serve

    <_config:postprocessor classname="com.ibm.commerce.foundation.serve
    <_config:postprocessor classname="com.ibm.commerce.foundation.serve
    <_config:postprocessor classname="com.ibm.commerce.foundation.serve
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    <_config:postprocessor classname="com.ibm.commerce.foundation.serve
    <_config:postprocessor classname="com.ibm.commerce.foundation.serve
    <_config:postprocessor classname="com.ibm.commerce.foundation.serve
  </_config:query>
  <_config:group inherits="false">
    <_config:param name="group" value="true"/>
    <_config:param name="group.limit" value="100"/>
    <_config:param name="group.facet" value="true"/>
    <_config:field name="grouping_parentCatentry_id"/>
  </_config:group>
  <_config:heroproduct inherits="false">
    <_config:param name="overrideFieldName" value="thumbnail"/>
    <_config:param name="showGroupPriceRange" value="true"/>
    <_config:field name="ads_f10003" value="Hero"/>
  </_config:heroproduct>
  <_config:result inherits="true">
    <_config:field name="ads_f10003"/>
  </_config:result>
</_config:profile>
```

Tagging

Searching

```
<!--
  This profile inherits all the elements defined in the IBM_findProductsBySear
-->
<_config:profile name="IBM_findProductsBySearchTerm_grouping" extends="IBM_findP
  <_config:query inherits="true" override="postprocessor">
    <!-- When QueryMissingGroupOwner is set, and the productBean is not among th
    <_config:param name="QueryMissingGroupOwner" value="true"/>
    <_config:preprocessor classname="com.ibm.commerce.foundation.server.serv
    <_config:postprocessor classname="com.ibm.commerce.foundation.server.ser

    <_config:postprocessor classname="com.ibm.commerce.foundation.server.ser
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    <_config:postprocessor classname="com.ibm.commerce.foundation.server.ser
    <_config:postprocessor classname="com.ibm.commerce.foundation.server.ser
  </_config:query>
  <_config:group inherits="false">
    <_config:param name="group" value="true"/>
    <_config:param name="group.limit" value="100"/>
    <_config:param name="group.facet" value="true"/>
    <_config:param name="group.sort" value="score desc"/>
    <_config:field name="grouping_parentCatentry_id"/>
  </_config:group>
  <_config:heroproduct inherits="false">
    <_config:param name="overrideFieldName" value="thumbnail"/>
    <_config:param name="showGroupPriceRange" value="false"/>
  </_config:heroproduct>
</_config:profile>
```

Most relevant

Auto-suggest enhancement

- Suggested keyword scoped by:
 - Store
 - Catalog
- Suggested product driven by rule based filtering:

Auto-suggest enhancement – keyword suggestion

- Suggested keyword scoped by:

- Store
- Catalog

is enabled by default.

- wc-component.xml

To optimize the indexing process, only enable one of the above copy field functions, the search server and perform full data-import index build.

```
-->
<_config:property name="LimitKeywordSuggestionsToStoreAndCatalog" value="false" />
```

- solr-config.xml

```
<!--
```

```
<!--
    WebSphere Commerce data import request handler
-->
<requestHandler name="/dataimport" class="org.apache.solr.handler.dataimport.DataImportHandler">
  <lst name="defaults">
    <str name="config">wc-data-config.xml</str>
    <!-- Enable if using dynamic spellCheck field.
    <str name="update.chain">wc-conditionalCopyFieldChain</str>
    -->
  </lst>
</requestHandler>
```

```
<!--
    WebSphere Commerce conditional Copy Field Chain update processor

    When enabled, it copies the source fields into the target field if the conditions are met. The target field is
    tokenized with store and catalog. It is meant to create store and catalog specific spell check columns to be used by
    the Solr TermComponent.

    i.e. spellCheck_10152_10001 where the store id is 10152, and catalog id is 10001
-->
<!-- Enable if using dynamic spellCheck field.
<updateRequestProcessorChain name="wc-conditionalCopyFieldChain">
  <processor class="com.ibm.commerce.foundation.internal.server.services.search.index.solr.ConditionalCopyFieldProcessorFactory">
    <bool name="enabled">true</bool>
    <str name="sourceField">name,shortDescription,keyword,nameOverride,shortDescriptionOverride,keywordOverride</str>
    <str name="targetField">spellCheck</str>
    <lst name="conditions">
      <str name="published">1</str>
      <str name="buyable">1</str>
    </lst>
  </processor>
  <processor class="solr.LogUpdateProcessorFactory" />
  <processor class="solr.RunUpdateProcessorFactory" />
</updateRequestProcessorChain>
-->
```

Auto-suggest enhancement – product suggestion

- Suggested product driven by rule based filtering:

```

<_config:profile name="IBM_findNavigationSuggestion_Products" indexName="CatalogEntry" >
  <_config:query>
    <_config:param name="maxRows" value="12"/>
    <_config:param name="searchType" value="1000"/>

    <!-- Default providers -->
    <_config:provider classname="com.ibm.commerce.foundation.internal.server.services.search.express" />
    <_config:provider classname="com.ibm.commerce.foundation.internal.server.services.search.express" />
    <_config:provider classname="com.ibm.commerce.foundation.internal.server.services.search.express" />
    <_config:provider classname="com.ibm.commerce.foundation.internal.server.services.search.express" />

    <!-- profile added providers -->
    <_config:provider classname="com.ibm.commerce.foundation.server.services.rest.search.expression" />
    <_config:provider classname="com.ibm.commerce.foundation.server.services.rest.search.expression" />
    <_config:provider classname="com.ibm.commerce.foundation.server.services.rest.search.expression" />
    <_config:provider classname="com.ibm.commerce.foundation.server.services.rest.search.expression" />
    <_config:provider classname="com.ibm.commerce.foundation.server.services.rest.search.expression" />
    <_config:provider classname="com.ibm.commerce.foundation.server.services.rest.search.expression" />
    <_config:provider classname="com.ibm.commerce.foundation.server.services.rest.search.expression" />
    <_config:provider classname="com.ibm.commerce.foundation.server.services.rest.search.expression" />
    <_config:provider classname="com.ibm.commerce.foundation.server.services.rest.search.expression" />
    <_config:field name="name"/>
    <_config:field name="defaultSearch"/>
    <_config:field name="categoryname"/>
    <_config:field name="shortDescription"/>
    <_config:field name="name_suggest"/>
    <_config:field name="shortDesc_suggest"/>

    <!-- Default preprocessor -->
    <_config:preprocessor classname="com.ibm.commerce.foundation.internal.server.services.search" />
  
```

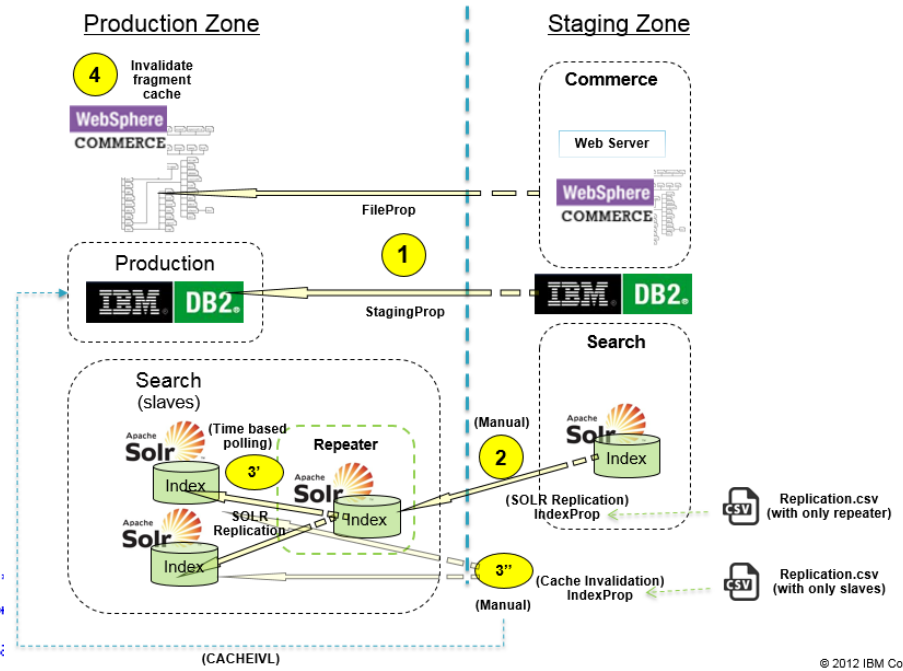
Logging and tracing enhancement

Search Server

- Wink
- Serviceability trace
- Transaction
- Component trace
 - REST
 - Catalog
 - Foundation
 - Cache invalidation
- Solr
- Admin logging
 - Indexing
 - Replication
 - Cache invalidation

```

com.ibm.commerce.catalogtype.*
com.ibm.commerce.dynacache.*
com.ibm.commerce.foundation.*
+ com.ibm.commerce.found:
+ com.ibm.commerce.foundation.common.*
+ com.ibm.commerce.foundation.dataload.*
+ com.ibm.commerce.foundation.external.*
+ com.ibm.commerce.foundation.internal.*
+ com.ibm.commerce.foundation.logging.*
  com.ibm.commerce.foundation.logging.AdminLogger
  com.ibm.commerce.foundation.logging.ExtendedInfo
  com.ibm.commerce.foundation.logging.ServiceLogger
  com.ibm.commerce.foundation.logging.TransactionLogger
+ com.ibm.commerce.foundation.logging.service.*
+ com.ibm.commerce.foundation.rest.*
+ com.ibm.commerce.foundation.server.*
com.ibm.commerce.giftcenter.*
com.ibm.commerce.infrastructure.*
com.ibm.commerce.installment.*
com.ibm.commerce.inventory.*
    
```

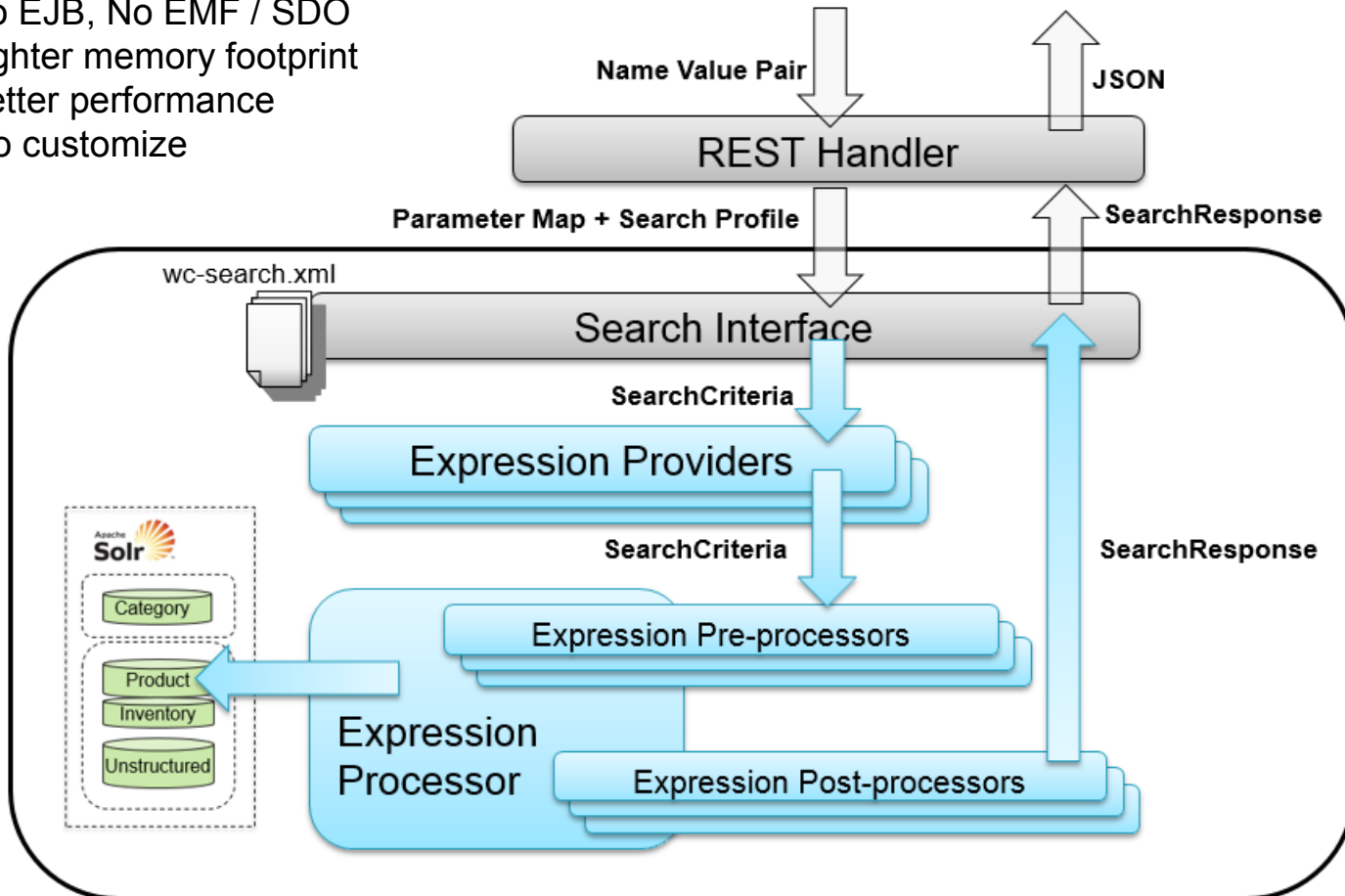


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Backup slides

FEP 7/8 Search programming model update (Simplified, lightweight on Search server)

- Shorter overall code path
 - No EJB, No EMF / SDO
 - Lighter memory footprint
 - Better performance
- Easier to customize



Thank You!

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