Endeca® Information Access Platform

Workbench User's Guide

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Preface

The Endeca® Information Access Platform is the foundation for building applications based on Endeca MDEX Engine® technology. With the Endeca Information Access Platform, you can build Guided Navigation® functionality into your Web applications. The Endeca Guided Navigation solution puts the results of all navigation, search, and analytic queries in an organized context that shows users how to refine and explore further. This helps solve the problems associated with information overload by guiding users as they quickly and precisely navigate through large data sets.

About this guide

This guide describes what business users can do in Endeca IAP Workbench to modify an Endeca implementation. It also describes what others must do in order for the changes to take effect.

Who should use this guide

This guide is intended for business users who are updating Endeca implementations.

Contacting Endeca Standard Customer Support

The Endeca Support Center provides registered users with important information regarding Endeca software, implementation questions, product and solution help, training and professional services consultation as well as overall news and updates from Endeca.

You can contact Endeca Standard Customer Support through the Support section of the Endeca Developer Network (EDeN) at http://eden.endeca.com.

Chapter 1

Introduction

This chapter introduces you to the Endeca Information Access Platform and how you, the business user, can work with it. The chapter has the following sections:

- What is the Endeca Information Access Platform?
- What is IAP Workbench?

What is the Endeca Information Access Platform?

This section gives a high-level view of the Endeca Information Access Platform. It includes these topics:

- Exploring data with Guided Navigation applications
- Understanding records, dimensions, and properties
- The makeup of an Endeca implementation

Exploring data with Guided Navigation applications

Endeca was founded on the simple idea that users want to explore data interactively in real time, relying on a friendly, intuitive interface, regardless of the scale and complexity of the underlying data. Users need to search, navigate, and analyze all of their data, often in large and multiple data sources, "slicing and dicing" across any dimension, and drilling down to the finest grain of detail or zooming out to an aggregate view. At the same time, users need an application that responds intelligently to their current navigation state, guiding them along valid paths and eliminating invalid choices (dead ends). Users should experience simple, intuitive navigation.

The Endeca Information Access Platform, based on the Endeca MDEX Engine, is a powerful platform designed to help you build such easy and intuitive **Guided Navigation applications**. Guided Navigation applications not only tell users the results of their query, they also tell them all the valid next-step questions they can ask to refine and explore further, while eliminating the frustrating reply of "No Results Found." These next-steps are re-ranked and re-organized with each click, creating a productive and satisfying navigation experience for your users.

Endeca MDEX Engine query results

All query results returned from the Endeca MDEX Engine contain two types of information:

- The appropriate results for the query (for example, a record set or an individual record)
- The supporting information for building follow-on queries

The follow-on query information allows users to refine or broaden their query and, correspondingly, their query results. The method the MDEX Engine uses to compute this information eliminates invalid follow-on queries (dead ends). Eliminating dead ends and providing relevant next-step refinement choices are two of the primary features that distinguish Endeca solutions from other types of search implementations.

Two types of queries

The Endeca Information Access Platform provides two types of queries:

- **Navigation queries**, which return a set of records based on application-defined record characteristics (such as wine type or region in an online wine store), plus any follow-on query information
- **Keyword search queries**, which return a set of records based on a user-defined keyword, plus any follow-on query information

Users can execute a combination of navigation queries and keyword search queries to navigate to their desired record set in the way that works best for them. For example, users can execute a keyword search query to retrieve a set of records, then use a follow-on navigation query to refine that set of records, and vice versa.

Understanding records, dimensions, and properties

Endeca records and dimensions provide the logical structure for the data in your Endeca implementation. This structure supports both navigation and search queries. Endeca properties provide descriptive information about individual Endeca records.

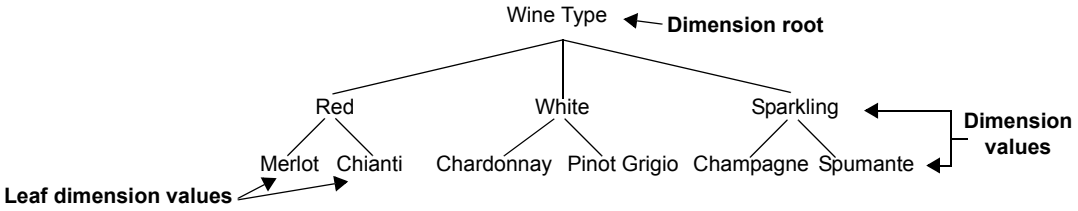
About records

Endeca **records** are the entities in your data set that you are navigating to or searching for. Bottles of wine in a wine store, customer records in a CRM application, and mutual funds in a fund evaluator are all examples of data stored as Endeca records.

About dimensions

Dimensions provide the logical structure for organizing the records in your data set. Your Endeca application can have many dimensions and dimensions can be hierarchical. Here is a simplified hierarchy in a wine data set:

A simplified dimension hierarchy



In this example, there is a dimension called Wine Type. Wine Type has three dimension values, Red, White, and Sparking. In turn, The Red dimension value has two values itself, Merlot and Chianti, and so on.

Application users navigate through the data by selecting dimensions. For example, the user might select Wine Type to display Red, White, and Sparkling as choices, then select Red to focus on red wines.

About properties

Properties are the data fields making up a record. In our wine example, properties might include the wine's name, year, winery, description, and so on.

A sample application

Here is a sample wine application. Users can select dimensions – such as wine type, country, and winery – to refine the displayed results. The returned results are listed at the bottom. This sample also shows three spotlighted records, which result from a dynamic business rule. You'll learn about dynamic business rules in the next chapter.

Dimensions, which users navigate through

Records, with properties

The makeup of an Endeca implementation

An **Endeca implementation** is an entire Endeca system, comprising the Endeca instance (the back-end data), the Endeca application (the front-end Web application), and the machines that are hosting the system.

Who does what

Your Endeca technical team builds your Endeca implementation. They process your application's data into dimensions, records, and properties. They also write the application code that provides the Web-based interface into the data.

You, as a business user, can modify and enhance the implementation developed by your technical team. For example, you can define dynamic business rules to spotlight content, as shown above. This guide describes all the things you can do.

For more information

You don't need to know more about what comprises an Endeca implementation, but if you want more information, read the first section of the *Getting Started Guide*, which goes into more detail.

What is IAP Workbench?

The Endeca Information Access Platform provides **Endeca IAP Workbench**, a Web-based tool that provides access to all the business functions that you perform. (IAP Workbench is also used by Endeca administrators; administration tasks are not described in this guide.)

Your Endeca administrator sets up IAP Workbench for your use, including:

- Defining you as a user with specified privileges
- Setting up IAP Workbench to communicate with your Endeca implementation

  Typically, the IAP Workbench you use is configured to work with a version of your implementation in a staging area, not the production version. That way, you can experiment with changes without affecting the deployed implementation. So when you make your changes, you are likely making them to the staging implementation, not the production version. When you have completed your changes and want them rolled into the production version, you contact your technical team, which does the migration.

Roles in IAP Workbench

IAP Workbench has several pages, each corresponding to a set of tasks. Some of the pages are for administrators, others are for business users. IAP Workbench manages access to these pages using **roles**. Your Endeca administrator assigns you roles that allow you to access some or all of the following pages:

- Rule Manager
- Keyword Redirects
- Phrases
- Thesaurus
- Stop Words
- Dimension Order
- Reports

Typically, a business user is not assigned administrative roles, which provide access to the IAP Workbench Administration pages.

Working with others

IAP Workbench is a multi-user environment, which means that it must have a mechanism whereby different people can work with it without overwriting each other's changes. IAP Workbench uses **locking** to prevent your work being overwritten by someone else.

When you select a page, such as the Dimension Order page, IAP Workbench locks it, meaning that you have exclusive use of it. No one else can display the page until you are done. There are two exceptions with the pages business users can access:

- There is no locking with the Reports page.
- With the Rule Manager and Keyword Redirects pages, locking is at the level of a rule group or a keyword redirect group, not the page as a whole. For more information about groups, see "Managing dynamic business rules" on page 18 or "Managing keyword redirects" on page 46.

The lock is broken when:

- You log out of IAP Workbench
- You move from one rule group or keyword redirect group to another (the lock on the previous group is broken)
- Your IAP Workbench session times out after 20 minutes of inactivity

  If your IAP Workbench session times out, you lose any unsaved work.
- Your Endeca administrator breaks the lock

  If your lock is broken by an administrator, you lose any unsaved work.

Note that simply moving to another IAP Workbench page does not release the lock; this is so you can move around IAP Workbench pages without losing your work.

If you try to access a page that is locked by someone else, you will see this message:

> Locked for editing from IAP Workbench by '*user*' from machine *machine-name*.

You can wait until the lock is released and try again or ask your administrator to release the lock if you are sure you will not be overwriting someone else's work.

Chapter 2

Using IAP Workbench

This chapter describes what business users can do in IAP Workbench. It includes these sections:

- Logging into IAP Workbench
- Managing dynamic business rules
- Managing keyword redirects
- Managing automatic phrases
- Managing thesaurus entries
- Managing stop words
- Viewing IAP Workbench resources that are locked
- Ordering dimensions and dimension values
- Viewing reports

For each of the tasks performed in IAP Workbench, the chapter describes:

- What you, the business user, can do
- What up-front work your technical team must have done to enable support of the feature
- Where in the IAP Workbench help the procedure is described
- What must be done after the change to have the Endeca application pick it up
- How to test the change

Logging into IAP Workbench

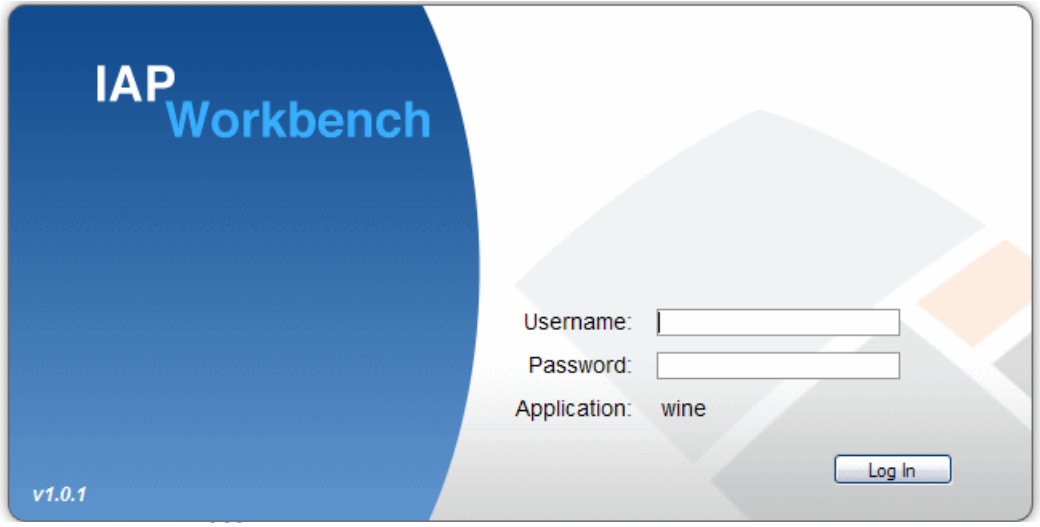
Your Endeca administrator gives you a user name and password to use to log into IAP Workbench.

To log into IAP Workbench:

1 Open a browser and access IAP Workbench by supplying the URL provided by your administrator, typically something like this:

```
http://host-name:8006
```

You see the IAP Workbench log in page.



2 Supply the user name and password provided by your administrator.

3 Click **log in**.

You are logged into IAP Workbench and have access to the pages specified by your user permissions. The pages are listed down the left side of the display.

Here is a sample of IAP Workbench that provides access to all the business functions:

You might not see all these pages listed, depending on your user profile. Note that the Phrases, Thesaurus, and Stop Words pages are all under Search Configuration.

Your user name is shown in the upper left corner of the page.

To view IAP Workbench help:

- Click the Help button in the upper left corner of the page.

  IAP Workbench Help opens in its own window.

IAP Workbench also provides context-sensitive help. Click  to view help specific to your current task.

To log out of IAP Workbench:

1. Click the Logout button in the upper left corner of the page.
2. Close the browser window to complete the logout.

Managing dynamic business rules

Dynamic business rules implement merchandising and **content spotlighting**™. Merchandising and content spotlighting is a process of identifying and promoting contextually relevant records to users as they navigate or search within a data set.

A dynamic business rule describes the logic of how to promote records for display to application users. A dynamic business rule consists of one or more **triggers** that specifies when to fire the rule and a **target** that indicates which records to promote.

Once you create and apply a dynamic business rule, the Endeca MDEX Engine compares each query a user makes to each rule to determine if the query triggers the rule. If a user's query or profile triggers a business rule, the MDEX Engine returns several types of results:

- Standard record results for the query
- Promoted records specified by the rule
- Any rule properties specified in the business rule

About merchandising

Endeca's merchandising works differently from traditional content management systems (CMS), where you select an individual record for promotion, place it on a template or page, and then publish it to a Web site. Endeca's merchandising is dynamic. Endeca uses dimension values and search terms to build dynamic business rules based on business logic.

When a user's query triggers a dynamic business rule, the rule specifies contextually relevant records to promote on a Web site. In rule-based merchandising, a dynamic business rule specifies how to query for records to promote, not necessarily what the specific records are.

This means that as your users navigate or search, they continue to see relevant results, because appropriate rules are in place. Also, as records in your data set change, new and relevant records are returned by the same dynamic business rule. The rule remains the same, even though the promoted records may change.

Comparing typical CMS scenarios with Endeca dynamic business rules

In a traditional CMS scenario, if Wine A is "recommended," it is identified as such and published onto a static page. If you need to update the list of recommended wines to remove Wine A and add Wine B to the static page, you must manually remove Wine A, add Wine B, and publish the changes. With Endeca's dynamic rule-based merchandising, the effect is much broader and requires much less maintenance. A rule is created to promote wines tagged as "recommended," and the search page is designed to render promoted wines when available.

In this scenario, the recommended Wine A is promoted on any number of pages that specify recommended wines in the target value for the result set. In addition, removing Wine A and adding Wine B is simply a matter of updating the source data to reflect that Wine B is now tagged as "recommended." After making this change, Wine B is promoted on any number of pages that specify recommended wines in the result set, without adjusting or modifying the business rule or the pages.

Support for static merchandising

In addition to using dynamic business rules to implement merchandising, Endeca provides support for static merchandising in the more traditional

CMS sense. Static merchandising provides the ability to add specific **featured records** to the records that are returned with a user's query. When a user's query triggers a rule that specifies a featured record, the Endeca record is returned.

A dynamic business rule may be configured to return a combination of both static featured records and the record list for dynamically generated results.

Sample dynamic business rule

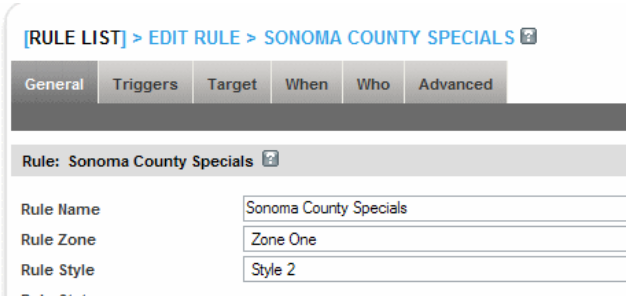
This section shows an example of a dynamic business rule that implements merchandising.

Consider a wine sales application. When a user makes a query that triggers a dynamic business rule, the Endeca MDEX Engine evaluates the rule, checking for records to promote as merchandising records. These merchandising records constitute a supplemental set of results that the MDEX Engine returns in addition to the regular results of the query. Typically, these merchandising record results are displayed differently than standard results.

In this example, the merchandising strategy for the rule assumes that a buyer interested in white wines is also likely to be interested in highly rated wines from Sonoma County.

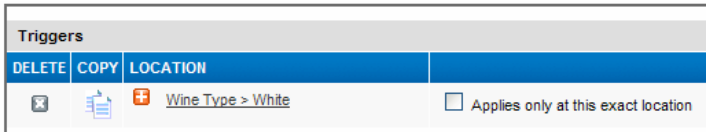
To create this rule, you log into IAP Workbench, go to the Rule Manager page, click Add Rule, and define the rule. In this example, the business rule has the following configuration:

- The title “Sonoma County Specials”
- A specified zone and style that dictates how the rule's results display

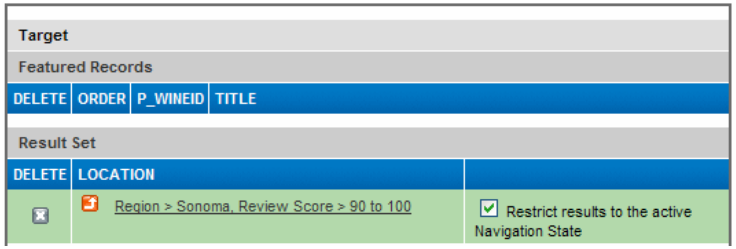


A Developer Studio user predefines the zone and style for you (see "About zones, styles, and rule groups" on page 30). In this example, the style had been defined to display a maximum of three results.

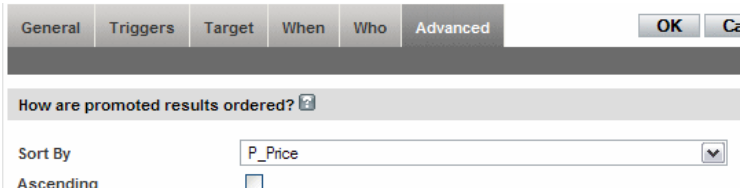
- A trigger value that causes the rule to fire when a user navigates to white wines (presented for this sample application in IAP Workbench as Wine Type > White)



- A target value to display highly rated white wines from Sonoma County (Region > Sonoma, Review Score > 90 to 100) and to restrict results to the active navigation state.



- An ordering where rule results are sorted by price



Here is the result when the user navigates to white wines. The white wines are listed down the left side of the page. In addition, three Sonoma county wines are spotlighted in the lower right corner of the page – the result of the Sonoma County Specials rule being fired. Remember that the style used for the rule specifies that up to three records can be displayed.

Typical merchandising uses

Here are some typical merchandising scenarios. Unlike the previous example, which shows some details of how a rule is created, these examples focus on the result set generated according to a rule and how those results meet the goals of a particular strategy to promote featured records.

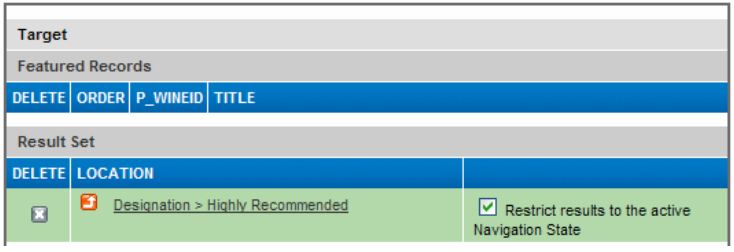
Dynamically promote highly recommended results

In this up-sell scenario, the merchandising strategy for the rule is to promote wines that have been categorized as Highly Recommended and return a dynamically generated set of records that also take into account the user's navigation location in the data set.

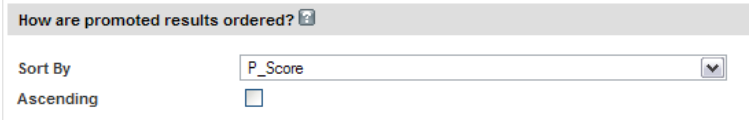
The dynamic business rule to accomplish this has the following configuration:

- The title "Highly Recommended"
- A specified zone and style that dictates how the rule's results display
- A trigger that causes the rule to fire at any location in the data set; in other words, the dynamic rule always applies, regardless of how the user has navigated the data set.

- A target value of Designation > Highly Recommended

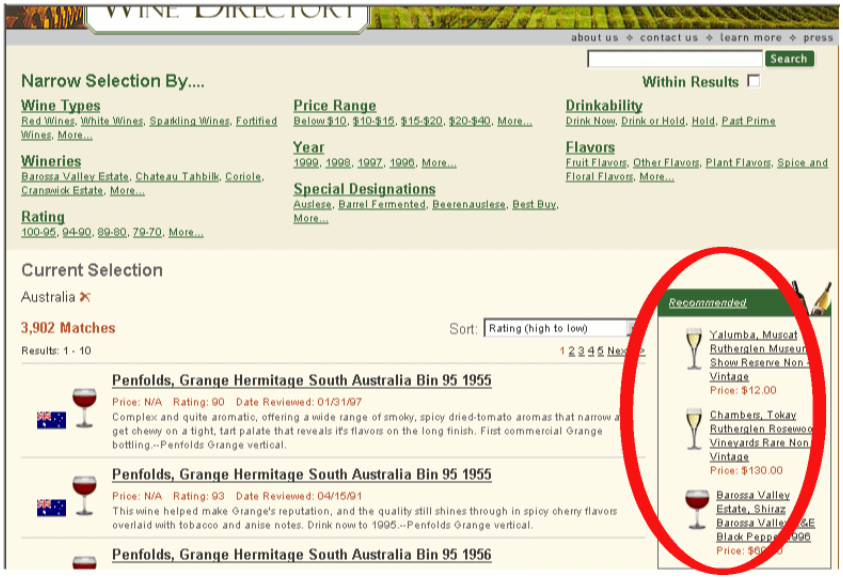


- Merchandising results that are ordered by a wine's score.



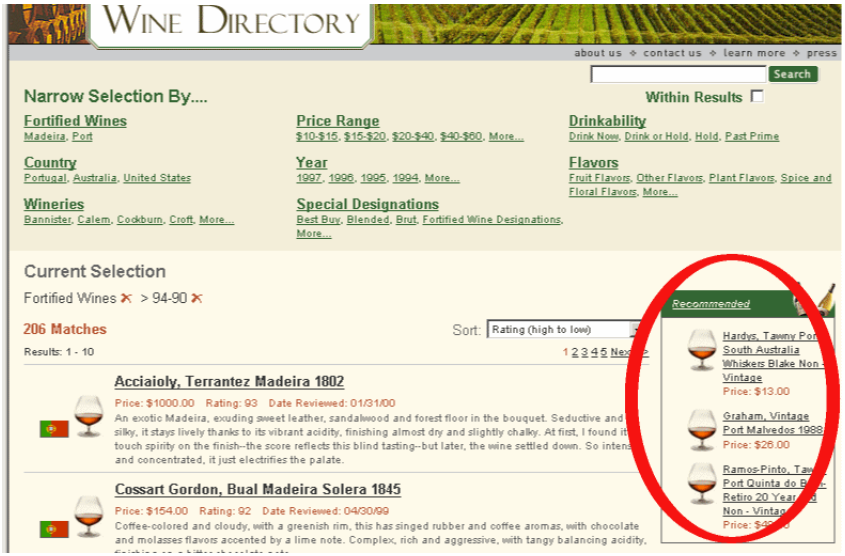
As a user searches or browses, this rule dynamically promotes results tagged as Highly Recommended. Navigating to any dimension value triggers the rule because the rule applies to all queries. Suppose a user navigated to Australian wines. In addition to the regular navigation results (3,902 matches for Australian wines), the records for three highly

recommended Australian wines appear in the area reserved for Recommended merchandising results:



Because the rule's target is restricted to the active navigation state, the results vary depending on the user's navigation location. For example, instead of navigating to Country > Australia, suppose a user navigated to fortified wines with a rating between 94 and 90. The MDEX Engine returns a different set of dynamically generated results.

In addition to the regular navigation results (206 matches for fortified wines with a rating between 94 and 90), the records for three highly recommended fortified wines appear in the area reserved for Recommended merchandising results:



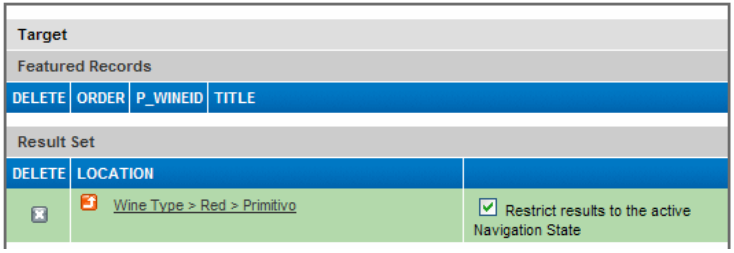
Promote related product category based on location

In this cross-sell scenario, the merchandising strategy for the rule is to promote wines that are similar to the wines in the trigger location. Specifically, the rule promotes Primitivo wines when a user navigates to Zinfandel wines.

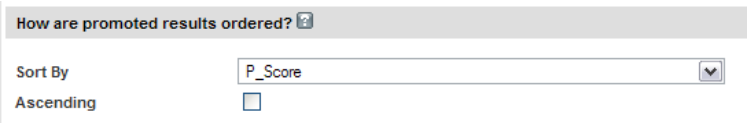
The dynamic business rule to accomplish this has the following configuration:

- The title “Also Try....”
- A zone and style that dictates how the rule's results display
- A trigger that causes the rule to fire when a user navigates to Wine Type > Red > Zinfandel

- A target value of Wine Type > Red > Primitivo



- Merchandising results that are ordered by a wine's score



Navigating to the location Wine Type > Red > Zinfandel triggers the rule. In addition to the regular navigation results (2,709 matches for Zinfandel wines), records for three Primitivo wines appear in the area reserved for Also Try... results:

Note that Recommended results appear in the area just below the Also Try... results. In this example, the Highly Recommended rule promotes

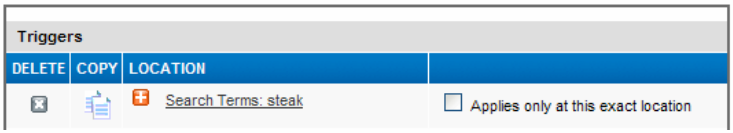
appropriate Zinfandel wines because a user navigated to Zinfandel wines and the trigger for this rule applies to every query.

Promote related category based on a search term

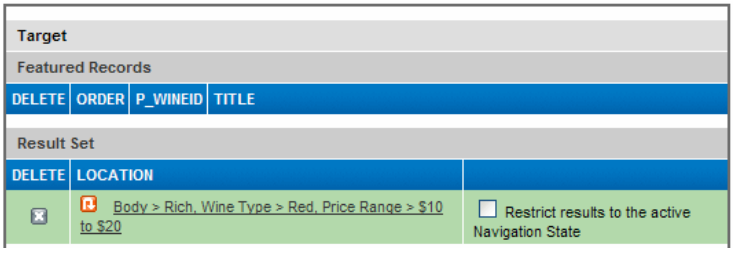
In this cross-sell scenario, the merchandising strategy for the rule is to promote wines that make a good meal pairing with a search term. Specifically, the rule promotes rich red wines that cost $10-$20 when a user searches with the term *steak*.

The dynamic business rule to accomplish this has the following configuration:

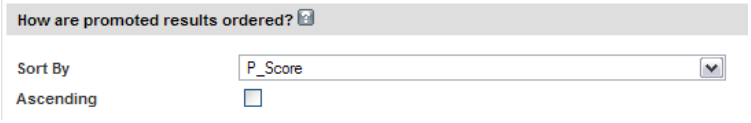
- The title "Great With A Steak"
- A zone and style that dictates how the rule's results display
- A trigger that causes the rule to fire when a user searches for the keyword *steak*



- A target of Body > Rich, Wine Type > Red, and Price Range > $10-$20



- Merchandising results that are ordered by a wine's score



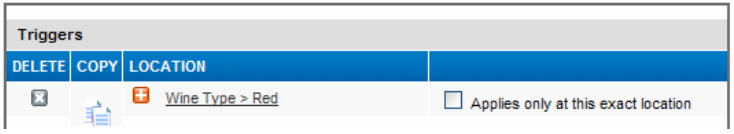
Searching for the keyword *steak* triggers the rule. In addition to the regular record search results (33 matches for steak in a wine's description), records for three rich red wines appear in the area reserved for Great With A Steak results:

Promote specific featured results

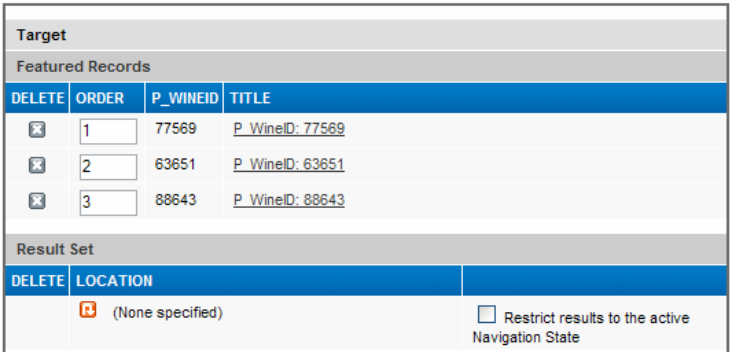
In this featured results scenario, the merchandising strategy for the rule is to promote three specific red wines as featured results when a top customer navigates to red wines.

The dynamic business rule to accomplish this has the following configuration:

- The title “Featured Reds”
- A zone and style that dictates how the promoted results display
- A trigger that causes the rule to fire when a user navigates to Wine Type > Red

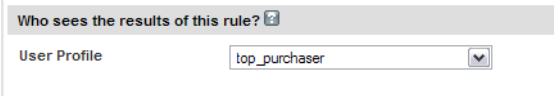


- A static target that lists three specific featured results; the order in which these results are added to the rule dictates the order in which they appear in the merchandising area

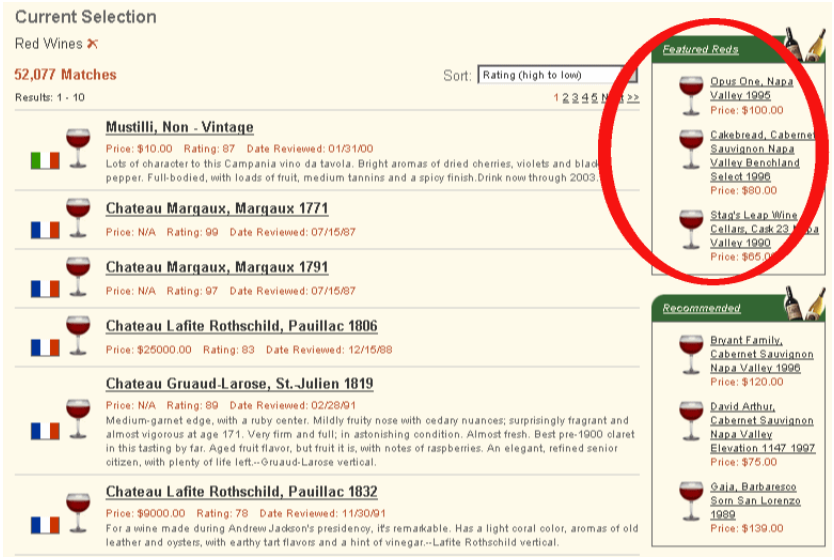


- A user profile that causes the rule to fire when a customer identified by the system as a top purchaser navigates to red wines

The Who tab has the "top_purchaser" user profile selected:



Navigating to red wines triggers the rule. In addition to the regular record search results (52,077 matches for red wine), records for the three featured red wines appear in the area reserved for Featured Reds results:



About zones, styles, and rule groups

When you create a rule, you specify its zone, style, and (optionally) rule group. Your Endeca technical team creates zones, styles, and groups for you.

About zones

As shown above, a rule requires an associated **zone**. A zone is a collection of dynamic business rules that ensures merchandising results are produced. Grouping business rules allows you to have multiple rules available, in case a single rule does not produce a result. This grouping ensures that the screen space dedicated to displaying business rule results is always populated.

A zone has a rule limit that dictates how many rules may be evaluated. For example, if a rule limit is set to two, then after two rules have evaluated successfully, no additional rules are evaluated. For example, a single zone with three rules could be used to promote "Recommended" wines first, and if no "Recommended" wines exist, then promote "Best Buy" wines instead.

About styles

A rule also requires an associated **style** that describes how to display the results of that rule on screen. One property of a style is how many records can display at a time.

About rule groups

A rule belongs to a **rule group**. By default, there is one rule group. If your technical team defined additional rule groups, then before you can create or modify a rule, you must select the rule group to which the rule belongs.

Rule groups serve two functions:

- They provide a means to organize a large number of rules into smaller logical categories which usually affect distinct (non-overlapping) parts of a Web site. For example, a retail application might organize rules that affect the electronics and jewelry portions of a Web site into a group for Electronics Rules and another group for Jewelry Rules. If you were to select Electronics Rules on the Rule Manager page, you would access all the rules in that group.
- They enable multiple users to access dynamic business rules simultaneously. From the Rule Manager page, each user can access a single rule group at a time. Once you select a rule group that contains the rules you want to modify, IAP Workbench prevents other users from editing that group until you return to the selection list or close your browser window.

About approval workflow and dynamic business rules

Endeca IAP Workbench provides basic workflow capabilities to manage the creation, modification, notification, and activation or deactivation of dynamic business rules in an Endeca application. In the context of IAP Workbench, *workflow* is a predictable and guided set of steps to manage rules as they move through the process of being created, modified, and activated or deactivated.

Activating a rule makes it available in an application to generate merchandising or spotlighting results in response to user queries. Deactivating a rule disables the rule from generating results in an application.

Workflow actions and rule group access are controlled by user permissions in IAP Workbench. An administrator of IAP Workbench assigns permissions to business users that allow them to approve, edit, view, or not access rule groups. Permissions are further described in "Workflow user permissions" on page 32.

As a rule moves through the workflow steps (creation, approval, notification, and so on) IAP Workbench tracks and displays the rule's most recent history. Earlier history is stored in the IAP Workbench log file. History includes information about who modified the rule, when it was modified, state changes, and so on.

Note: *Workflow does not apply to other features in IAP Workbench, such as, thesaurus entries, keyword redirects, automatic phrasing, and so on.*

Approval workflow versus application workflow

Workflow in IAP Workbench is *content approval workflow*. That is, IAP Workbench manages the approval or rejection of content changes made to a dynamic business rule. Content workflow can be distinguished from *application workflow*, which describes the progress of an application as it moves from a development environment to a staging environment to a production environment.

Workflow user permissions

There are four user permissions available as part of managing the workflow of dynamic business rules—approve, edit, view only, and none. Permissions are assigned per rule group. An administrator assigns these permissions on the User Management page or on the Rule Group Permissions page of IAP Workbench (both pages are under Administration).

- Approve permissions

  A user with approve permissions can create, edit, activate, and deactivate rules. This includes both inactive and active rules. In short, this permission allows all workflow capabilities. The typical role of a user with approve permissions is to approve or reject activation requests made by a user with edit permissions.

  The approve permission can also be assigned to all IAP Workbench users in cases where workflow is not necessary. See "Simplified workflow steps" on page 41 for more information.

- Edit permissions

  A user with edit permissions can create rules, edit inactive rules, and request that rules be activated or deactivated in an application. An editor cannot directly edit an active rule, make a rule active, or inactivate an active rule.

- View Only permissions

  A user with view permissions can view rules but cannot activate or modify them.

- None

  A user with the none permission cannot approve, edit, or view rules in a group. Users who have this permission for a rule group do not see the rule group displayed in IAP Workbench.

A business user with edit permissions can only modify a rule and request activation or deactivation of any rule to which he or she has access. This means that if a business user has edit permissions for only Rule Group A, the user does not have permissions to create, revise, or request activation of rules in any other rule group than Rule Group A.

If multiple business users have edit permissions to the same rule group, those business users are peers within that rule group. In other words, any user can view all other requests for that group, and create, modify, or request activation or cancel requests of any rule within the group.

Workflow tips

- If it is necessary to restrict workflow permissions to a subset of users, a developer can create additional rule groups in Developer Studio and a IAP Workbench administrator can assign permissions as necessary.

Workflow states

A rule’s state is either *active* or *inactive*. An end-user's query can trigger an active rule. A user's query cannot trigger an inactive rule. In other words, an active rule, if triggered, generates merchandising or spotlighting results. An inactive rule cannot be triggered. Rules have an inactive state if they are new, or because they are pending activation, or not approved.

A rule’s state also suggests the rule’s progress from the beginning of its lifecycle to the end of its lifecycle in an application. For example, a newly

created rule starts with a state of *Inactive: Draft*. After configuration and approval, the state is *Active*. When the rule is no longer necessary, it can be deactivated and its state is *Inactive*.

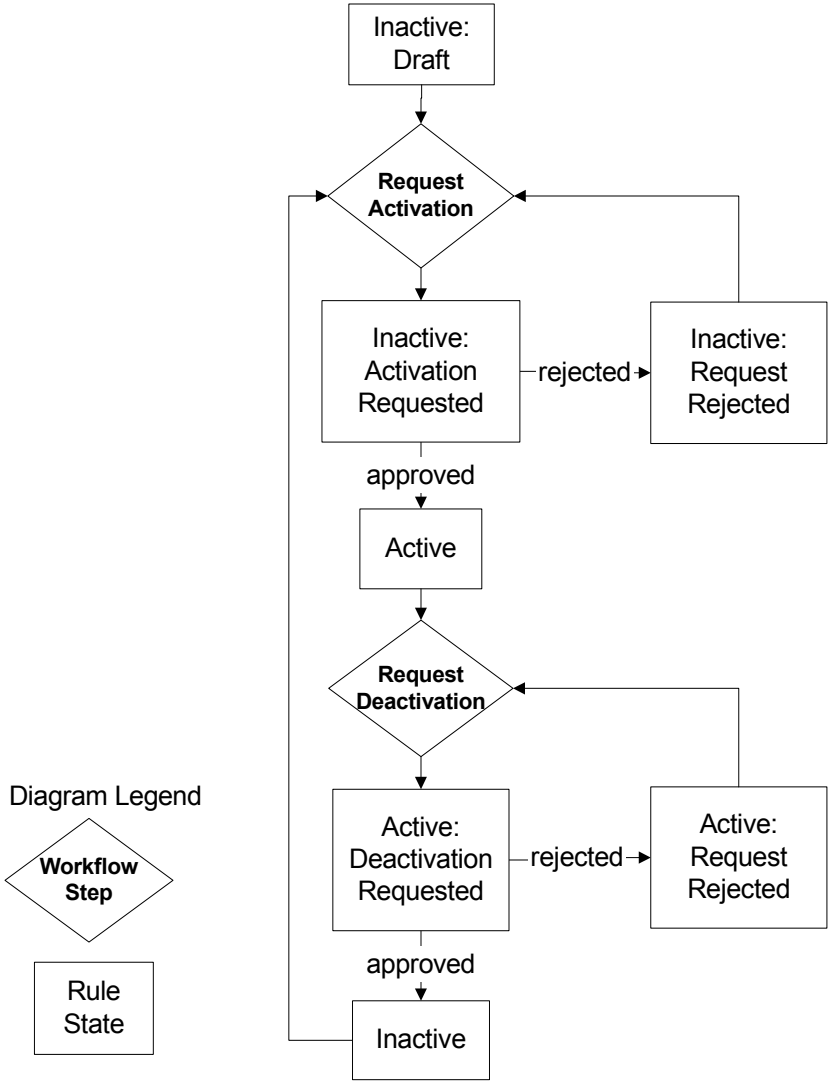
The following table describes all the workflow states that are available to a dynamic business rule.

State	Description
Inactive: Draft	The state of a newly created rule. A rule in this state has not yet been approved (or rejected) for use in an application and it might not be fully configured to produce merchandising results.
Inactive: Activation Requested	A rule that is configured and ready to approve or reject by a IAP Workbench user with approve permissions. A rule in this state is not yet available for use in an application.
Inactive: Request Rejected	A rule whose activation request is rejected by a IAP Workbench user with approve permissions. A rule in this state is not available for use in an application.
Active	A rule that is approved by a IAP Workbench user with approve permissions. A rule in this state is available in an application and generates merchandising results when appropriate.
Active: Deactivation Requested	A rule that is active in an application but has an open request to deactivate it.
Active: Request Rejected	A rule whose deactivation request is rejected by a IAP Workbench user with approve permissions. A rule in this state is available in an application and generates merchandising results when appropriate.

State	Description
Inactive	A rule that is deactivated by a IAP Workbench user with approve permissions. A user with edit permission can request activation of an inactive rule and start the workflow process from the beginning. An inactive rule is no longer available in an application to generate merchandising results.

Workflow steps for editors and approvers

The following diagram shows workflow steps that a dynamic business rule progresses through. The state of a new rule begins with Inactive: Draft and ends with Inactive.



The following process describes the typical workflow steps for a new rule. There are two IAP Workbench users involved—a user with edit permissions (an editor) and a user with approve permissions (an approver):

1 Editor—Adds a new rule and configures it to promote records. All new rules, including copies of existing rules, begin with a state of Inactive: Draft. For example, the following image shows a new rule in Inactive: Draft (columns truncated for display):

TRIGGER	TARGET	ZONE	STATE	REQUEST ACTIVATION	REQUEST DEACTIVATION	PREVIEW
Wine Type > Red	Wine Type > Red > Merlot, Designation > Highly Recommended	Zone One	Inactive: Draft	☐		☐

2 Editor—Previews the rule to confirm that the rule promotes the intended records. (The preview application has to be set up and also enabled for display. See the *Endeca IAP Workbench help* for more information about previewing.)

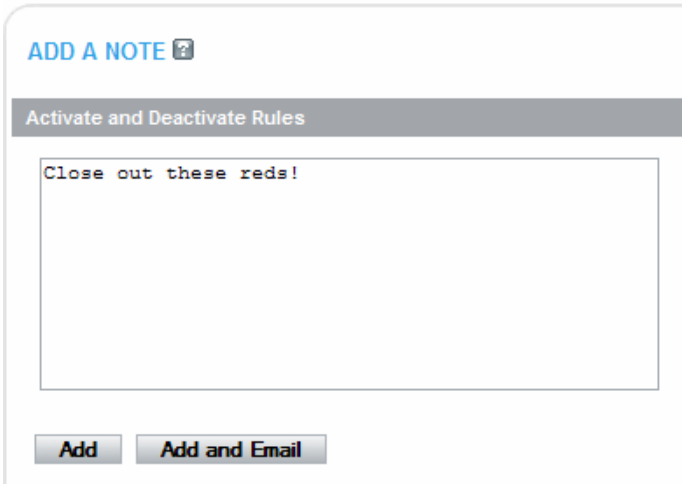
3 Editor—Requests activation of a rule. While a rule has an open activation request, the rule's state is Inactive: Activation Requested. For example, the following image shows a new rule in Inactive: Activation Requested (columns truncated for display):

TRIGGER	TARGET	ZONE	STATE	REQUEST ACTIVATION	REQUEST DEACTIVATION	PREVIEW
Wine Type > Red	Wine Type > Red > Merlot, Designation > Highly Recommended	Zone One	Inactive: Activation Requested	☑		☐

4 Editor—Saves changes.

5 Editor—(optional) Adds a note to the rule that provides detail for the activation request. The editor can add the note or add the note and also

e-mail the note to others. For example, the following image shows the Note page for a request to activate a rule:



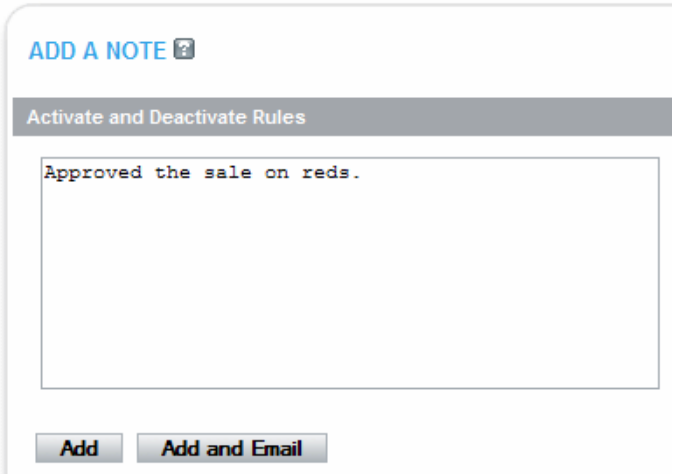
6 Approver—Examines the rule, on the Requests tab, and approves, rejects, or leaves the default selection of pending for the request for activation. Examining a request may include previewing the rule in an application. (See the *Endeca IAP Workbench help* for more information about previewing.) For example, the following image shows a rule that is approved for activation:

If a request is approved, the rule becomes active in the application. A rule may stay in an Active state until an editor or approver decides the rule should be deactivated.

If an approver rejects an activation request, the rule's state is Inactive: Request Not Approved.

7 Approver—Saves changes.

8 Approver—(optional) Adds a note to the rule that provides detail for the approval, rejection, or pend action. The approver can add the note or add the note and also e-mail the note to others. For example, the following image shows the Note page for an approved activation request:



9 Editor—Requests the deactivation of a rule. While a rule has an open deactivation request, the rule's state is Active: Deactivation Requested. For example, the following image shows a rule in Active: Deactivation Requested (columns truncated for display):

TRIGGER	TARGET	ZONE	STATE	REQUEST ACTIVATION	REQUEST DEACTIVATION	PREVIEW
Wine Type > Red	Wine Type > Red > Merlot, Designation > Highly Recommended	Zone One	Active: Deactivation Requested		☑	☑

If a deactivation request is approved, a rule is no longer available in the application. It's state becomes Inactive.

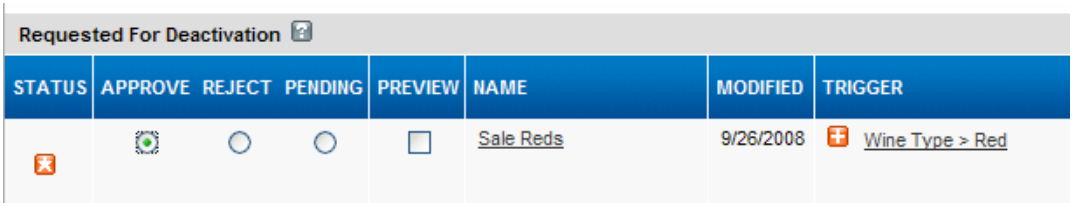
If a deactivation request is rejected, a rule is in the Active: Request Not Approved state.

10 Editor—Saves changes.

11 Editor—(optional) Adds a note to the rule that provides detail for the deactivation request. The editor can add the note or add the note and

also e-mail the note to others. For example, the following image shows the Note page for a request to deactivate a rule:

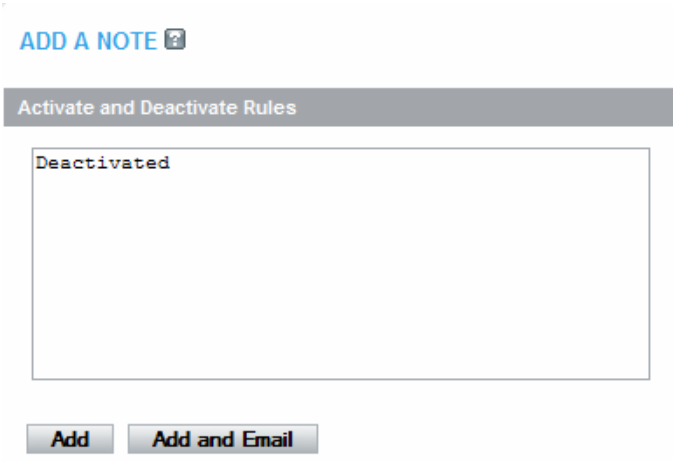
12 Approver—Examines the rule, on the Requests tab, and approves, rejects, or pends the request for deactivation. Examining a request may include previewing the rule in the application. (See the *Endeca IAP Workbench help* for more information about previewing.) For example, the following image shows a rule that is approved for deactivation:



13 Approver—Saves changes.

14 Approver—(optional) Adds a note to the rule that provides detail for the approval, rejection, or pend action. For approvals and rejections, the approver can add the note or add the note and also e-mail the note to

others. For example, the following image shows a Note page for an approved deactivation request:



That completes the workflow approval process for a dynamic business rule. The process begins again with any new rules and in cases where an editor selects an inactive rule and requests its activation. In this case, the process begins again at step 2.

Simplified workflow steps

The typical workflow scenario involves users with approve permissions and users with edit permissions. In cases where workflow is not required, this distinction between approver and editor is not necessary. This section describes a simplified workflow scenario that allows IAP Workbench users to do away with the steps to request the activation or deactivation of a rule.

In the simplified workflow scenario, an administrator assigns all IAP Workbench users approve permissions for rule groups. The users can create new rules and activate them without any transitional steps to request approval.

The following example describes simplified workflow steps for a new rule:

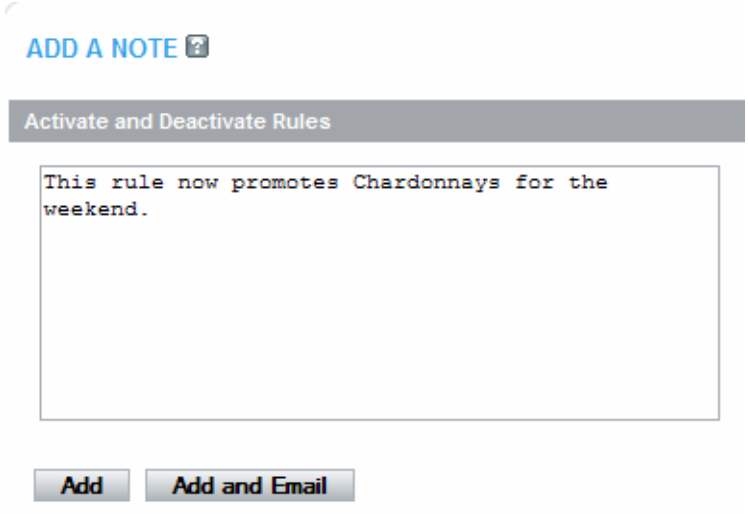
1. Approver—Adds a new rule and configures it to promote records. All new rules, including copies based on existing rules, begin with a state of Inactive: Draft.
2. Approver—Activates the rule. Activating a rule may first include previewing the rule in an application. (See the *Endeca IAP Workbench help* for more information about previewing.) A rule may stay in an Active state until an approver decides the rule should be deactivated.
3. Approver—Deactivates the rule. A rule is no longer available in the staging application. It's state becomes Inactive.

Workflow change notification

After you change the workflow state for a rule in IAP Workbench, the Note page displays to provide a simple way to describe changes you make. A state change occurs when a IAP Workbench user does any of the following to a rule: activates, deactivates, requests activation, requests deactivation, cancels a request for a rule, or rejects a request.

For example, a user with edit permissions might modify a rule, make a request to activate the rule, and add a note to indicate "This rule now promotes Chardonnay wines for the weekend." This information is useful for a user with approve permissions to understand what has changed before activating a rule.

For example:



If either an approver or editor makes changes to multiple rules, IAP Workbench saves the note information for all rules that were modified.

A note displays under Rule History on the General tab. There is no history tracking for note information. The last note you provide is saved and displayed on the General tab. Previous notes are stored in the IAP Workbench log file. A note is not required.

In addition to adding a note to a rule, you can also choose to e-mail a note along with change notification information for any rule that has been modified. Change notification information includes the name and new workflow state for any modified rules.

IAP Workbench creates an e-mail addressed to all approvers associated with a modified rule group. IAP Workbench also addresses the e-mail to the last editor who made any type of rule request.

See the *Endeca IAP Workbench help* for information about adding notes and sending e-mail notification.

Working with business rules

This section describes how business rules are implemented and tested.

What you can do

In IAP Workbench, you can:

- Create rules
- Edit rules
- Set rule priorities
- Request activation or deactivation of rules (with edit permissions)
- Activate or deactivate rules (with approve permissions)
- Preview rules in the application (and see why defined rules fired or didn't fire as you navigate throughout your application). You can preview rules if your preview application is set up and enabled for display in IAP Workbench.
- Delete rules

What up-front work must have been done to enable support of the feature

The technical team must create zones, styles, and (optionally) rule groups using Developer Studio before you can create rules. Also, the technical team must modify the application code to extract rule results from the query results.

Where in the IAP Workbench help the rule procedures are covered

The information is covered in "Working with dynamic business rules" in the IAP Workbench help.

Here is the basic flow:

1 Create a new rule with your desired trigger and target values.
   - If you are using rule groups, select the group to put the new rule in.
   - Name the rule.
   - Select a zone and style.
   - Specify the trigger on the Where and What tab.
   - Specify the target on the Where and What tab.
   - Specify how the promoted results are ordered.

- Specify when the rule is active, if desired.
- Restrict which users the rule applies to, if desired.
- Add rule properties, if desired.
- Change the rule's priority, if desired.

2 Request activation of the rule.

3 Preview the rule in the application, if necessary.

When creating and testing rules, you use the **preview application**, an Endeca-enabled application that displays in the lower part of the Rule Manager page. You use the preview application to navigate to or search for specific locations in your data that then become the basis for dynamic business rules. Your technical team manages the preview application. To enable a preview application, the administrator has to set it up, and also enable the display of the preview application in IAP Workbench. (By default, IAP Workbench displays the preview of the reference application, but if the administrator removes the URL mapping values for the preview application, the preview application does not display.) See the *Endeca IAP Workbench help* for information on the preview application.

4 Activate the rule, and if necessary, deactivate the rule’s predecessor.

What must be done after the change to have the Endeca application pick it up

Activating and saving the rule makes it available to your application.

How to test the change

While you are developing dynamic business rules against your preview application, it is important to apply and test them to ensure a rule performs the task you intended.

To test a rule:

1 On the Rule Manager page of IAP Workbench do one of the following:

- If your application uses multiple rule groups, select the rule group that contains the rule(s) you want to preview.
- If your application uses the single default rule group, skip to step 2.

2. Click the Preview checkbox for each rule you want to test. (Active rules have Preview enabled by default.) This button is displayed only if your application's preview is enabled for display.
3. Click the Preview button. This button is displayed only if your application's preview is enabled for display. IAP Workbench is now in preview mode. IAP Workbench previews all rules from the application's home page. The rules on the Rules tab and the Requests tab display with color coding and additional status information (fired, not fired, etc.) as you search and navigate in the preview application.
4. Specify the preview time by doing one of the following:
   - Accept the current time of the MDEX engine as the preview time. (The current time is defined by the system clock of the host running the MDEX engine for the preview application.)
   - Click the Preview checkbox to enable the date/time selector and then specify a time.
5. To preview a specific rule, click a trigger value for a rule in the "Where and when does this rule apply?" column. You can also search or navigate at any location in the application in order to preview which rules trigger.
6. Check the portion of your preview application reserved for promoted results to see if the intended target records appear. (IAP Workbench immediately refreshes the promoted results as you search and navigate in the preview application.)
7. After you are finished viewing the preview application, click Stop Preview.
8. Edit your business rule if necessary, and repeat the steps above to achieve the intended results. In some cases, you may need to have your Endeca technical team modify zones, styles, or rule groups in Developer Studio.

Managing keyword redirects

Keyword redirects are used to redirect a user's search to a Web page (that is, a URL). Conceptually, keyword redirects are similar to dynamic business rules in that both have trigger and target values. The trigger of a

keyword redirect is one or more search terms; the target of a keyword redirect is a URL. If users search with the particular keyword, the redirect URL displays in the application. For example, you can set up a keyword redirect with a keyword trigger of *delivery* and a redirect URL of http://shipping.acme.com. Or you might create a keyword redirect with a keyword of *stores* and a redirect URL of http://www.acme.com/store_finder.htm.

If a keyword redirect has more than one keyword entry, then any single keyword can be present in a user's query for the redirect to fire. In other words, the user's search terms can match any of the keywords to present the redirect URL. The search terms do not need to match all of the keywords.

Each keyword entry has a match mode to indicate how the search terms in a user's query must match your specified keyword(s) in order for the redirect to fire. There are three match modes:

- In Match Phrase mode, all of the keywords must match in the same order in the user's query for the redirect to fire.
- In Match All mode, all of the keywords must match (without regard for order in the user's query) for the redirect to fire.
- In Match Exact mode (the default), all of the keywords must exactly match a user's query for the redirect to fire. Unlike the other two modes, a user's query must exactly match the keyword in the number of words and cannot be a super set of the keywords.

Keyword redirect groups

A keyword redirect belongs to a **keyword redirect group**. Keyword redirect groups serve the same two functions as dynamic business rule groups:

- Keyword redirect groups provide a means to organize a large number of keyword redirects into smaller logical categories which usually affect distinct parts of a Web site. For example, a retail application might organize keyword redirects that affect the shipping and customer service portions of a Web site into a group for Shipping and Service and organize another group for Weekly Promotions. If you were to select Shipping and Service on the Keyword Redirects page, you would access all the keyword redirects in that group but none of the Weekly Promotions redirects.

- They enable multiple users to access keyword redirects simultaneously. In IAP Workbench, you can access a single group at a time. Once you select a group that contains the redirects you want to modify, IAP Workbench prevents other users from editing that group until you return to the selection list or close your browser.

What you can do

You can create, edit, and delete keyword redirects in both Developer Studio and in IAP Workbench.

What up-front work must have been done to enable support of the feature

Your Endeca technical team creates keyword redirect groups for you. There is one default group, so you can create keyword redirects without the technical team creating additional groups.

Also, your technical team must modify the application code to display the Web page you specify in a keyword redirect.

Where in the IAP Workbench help the procedure is covered

"Working with keyword redirects"

Where in the Developer Studio help the procedure is covered

"Configuring Keyword Redirects"

What must be done after the change to have the Endeca application pick it up

Saving the change immediately makes it available to your application.

How to test the change

Make sure your preview application is enabled for display and for keyword redirects, then search for text that you defined a keyword redirect for. Confirm that you are redirected to the specified URL.

Managing automatic phrases

When an application user provides individual search terms in a query, the **automatic phrasing** feature groups specified individual terms into a search phrase and returns query results for the phrase. Automatic phrasing is similar to placing quotes around search terms before submitting them in a query. For example, *"my search terms"* is the phrased version of the query *my search terms*. Automatic phrasing removes the need for application users to place quotes around search phrases to get phrased results.

Your technical team can select dimensions to enable the corresponding dimension values as automatic phrases. For example, if a developer selects the Wine Type dimension for automatic phrasing, dimension values such as *Pinot Noir* and *Cabernet Sauvignon* become automatic phrases.

What you can do

You can create, modify, and delete automatic phrases.

You can also view the dimensions that your technical team selected for automatic phrasing.

However, you cannot add or modify the dimensions selected for automatic phrasing, and you cannot view the list of dimension values that are automatic phrases.

You can also filter your view of automatic phrases.

What up-front work must have been done to enable support of the feature

Your technical team must add code to support automatic phrasing in an Endeca application. Coordinate with your technical team to ensure that all the required aspects of the feature are implemented in your Endeca application.

Where in the IAP Workbench help the procedure is covered

"Working with automatic phrases"

What must be done after the change to have the Endeca application pick it up

Saving the change immediately makes it available to your application.

How to test the change

Make sure the preview application is enabled for display and has phrasing enabled, then search for text you defined as a phrase. Confirm that the search returns only the phrased text, not individual words as well.

Managing thesaurus entries

Thesaurus entries provide a means to account for alternate forms of a user's query. With the thesaurus feature, you can create synonyms that capture other ways of expressing queries in your application. These entries provide concept-level mappings between words and phrases. For example, if users enter the search term *cab* to search for *cabernet sauvignon*, you could create a thesaurus entry to equate *cab* with *cabernet sauvignon*.

You can add two kinds of entries to your Endeca thesaurus:

- **One-way thesaurus entries** establish an equivalence between words or phrases that applies in a single direction only. For example, you could define a one-way mapping so that all queries for *Red Wine* would also return matches containing *Zinfandel*, but queries for *Zinfandel* would not return results for the more general *Red Wine*.

  You can add an unlimited number of synonyms to a one-way entry, and the application expands the query to search for each search term with the same one-way relationship. For example, you could add additional synonyms to the *Red Wine* entry to expand the search to *Merlot*, *Shiraz*, and *Bordeaux*.

- **Two-way thesaurus entries** establish a mutual equivalence relationship between words or phrases. For example, an equivalence might specify that the phrase *rose* is interchangeable with the phrase *blush*.

You might find it useful to examine reporting data for your application when creating thesaurus entries. If you find that users frequently search for a term you had not expected, you can create a form equivalence mapping in your thesaurus.

Tips

The thesaurus feature is very powerful, but poorly conceived entries can be expensive and not useful. To maximize the potential of this feature, keep the following suggestions in mind:

- Do not create a two-way thesaurus entry for a word with multiple meanings.

  For example, *khaki* can refer to a color as well as to a style of pants. If you create a two-way thesaurus entry for *khaki* = *pants*, then a user's search for khaki towels could return irrelevant results for pants.

- Do not create a two-way thesaurus entry between a general and several more-specific terms, such as *top* = *shirt* = *sweater* = *vest*. This increases the number of results the user has to go through while reducing the overall accuracy of the items returned.

  In this instance, better results are attained by creating individual one-way thesaurus entries between the general term *top* and each of the more-specific terms.

- A thesaurus entry should never include a term that is a substring of another term in the entry. For example, consider a two-way equivalency between *Eve* and *Adam and Eve* (the three words "Adam and Eve").

  If users type *Eve*, they get results for *Eve* or *Adam and Eve* (that is, the same results they would have gotten for *Eve* without the thesaurus). If users type *Adam and Eve*, they get results for *Adam and Eve* or *Eve*, causing the *Adam and* part of the query to be ignored.

- Stop words such as *and* or *the* should not be used in single-word thesaurus forms.

  For example, if *the* has been configured as a stop word, an equivalency between *thee* and *the* is not useful.

  You can use stop words in multi-word thesaurus forms, because multi-word thesaurus forms are handled as phrases. In phrases, a stop word is treated as a literal word and not a stop word.

(For more information about stop words, see "Managing stop words" on page 53.)

- Avoid multi-word thesaurus forms where single-word forms are appropriate.

  In particular, avoid multi-word forms that are not phrases that users are likely to type, or to which phrase expansion is likely to provide relevant additional results. For example, the two-way thesaurus entry *Aethelstan, King Of England (D. 939) = Athelstan, King Of England (D. 939)* should be replaced with the single-word form *Aethelstan = Athelstan*.

- Thesaurus forms should not use non-searchable characters.

  For example, the two-way thesaurus entry *Pikes Peak = Pike's Peak* should only be used if apostrophe (') is enabled as a search character. (To add a search character, contact your technical team.)

What you can do

You can create one-way and two-way thesaurus entries, edit thesaurus entries, and delete thesaurus entries. You can also filter your view of thesaurus entries.

What up-front work must have been done to enable support of the feature

None.

Where in the IAP Workbench help the procedure is covered

"Working with thesaurus entries"

What must be done after the change to have the Endeca application pick it up

Saving the change immediately makes it available to your application.

How to test the change

In the preview application (if it is enabled for display), specify a synonym you created. Confirm that the correct results are returned.

Managing stop words

Stop words are words that are ignored if an application user includes them as part of a search. Typically, common words like *the*, *and*, *a* and so on are included in the stop word list. For example, if a user searches for the phrase *the Gutenberg Bible*, the application ignores *the* and searches for *Gutenberg Bible*.

When adding stop words to your application, you want to add terms that are common in your data set. For example, if your data consists of lists of books, you might want to add the word *book* to the stop word list, because a search on that word would return an impracticably large set of records.

Words added to the stop word list are not expanded by other Endeca features like stemming and thesaurus. That means that if you set the word *item* as a stop word, its plural form *items* will not be marked automatically as a stop word. If you want both forms to be on the stop word list, you must add them individually.

Stop words must be single words only, and cannot contain any non-searchable characters. If more than one word is entered as a stop word, neither the individual words nor the combined phrase will act as a stop word. Non-searchable characters within a stop word will also cause this behavior. Entering "full-bodied" as a stop word acts just as if you had entered "full bodied", and does not have any effect on searches.

Some likely stop words are listed in "Suggested Stop Words" on page 59.

What you can do

You can add and delete stop words. You can also filter your view of stop words.

What up-front work must have been done to enable support of the feature

None.

Where in the IAP Workbench help the procedure is covered

"Working with stop words"

What must be done after the change to have the Endeca application pick it up

An administrator must run a baseline update for stop word changes to take affect in an application.

How to test the change

In the preview application (if it is enabled for display), enter a search that includes a stop word and confirm that the word is ignored in the search results.

Viewing IAP Workbench resources that are locked

A **resource** corresponds to a page in IAP Workbench, such as the Thesaurus page, Stop Words page, Phrases page, Rule Manager page, rule group, or keyword redirect group. A user acquires a resource lock by selecting a page or a group.

While one user has a resource locked, no other user can select the resource without getting an error such as "This resource is currently locked for editing by "*username*" from machine *hostname.company.com*". Resource locking protects a project from multiple users making conflicting changes at the same time.

What you can do

You can view the Rule Manager, Thesaurus, Stop Words, Phrases, or Keyword Redirects pages if they are locked by another user. You can also view rule groups and keyword redirect groups. However, you cannot modify the pages or groups until the lock for the resource is released or broken.

What up-front work must have been done to enable support of the feature

None.

Where in the IAP Workbench help the procedure is covered

"Viewing locked resources"

What must be done after the change to have the Endeca application pick it up

Nothing.

How to test the change

No testing required.

Ordering dimensions and dimension values

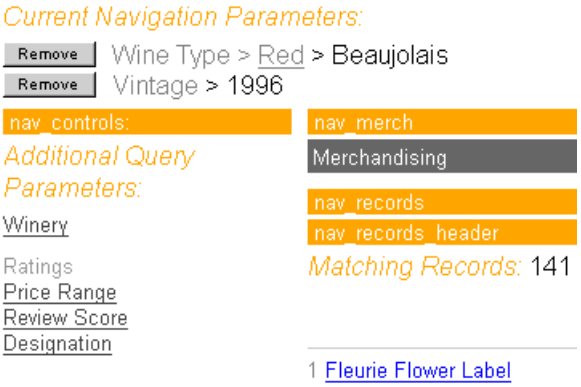
Dimensions are attributes of your data that are used for navigation and searching. For example, the Endeca Information Access Platform wine reference implementation uses the following dimensions, among others:

- Wine Type
- Region
- Vintage
- Price Range
- Review Score
- Designation

Each dimension has one or more **dimension values**. For example, Wine Type has the following values:

- Red
- Sparkling
- White

Application users can navigate the data using dimension values. In the following, the user has navigated to Beaujolais wines from 1996. There are 141 such wines.



Related dimensions can be organized in **dimension groups**. The reference implementation has two dimension groups:

- Ratings
- Characteristics

Ordering of dimensions By default, Endeca applications display dimensions, dimension values, and dimension groups in an order that is specified by the technical team.

For example, in the preceding examples, Wine Type displays before Region and Vintage. The dimension values Red, Sparking, and White display in that order. Similarly, the dimension group Ratings displays before the dimension group Characteristics. Note that all dimensions in the dimension group

Ratings (Price Range, Review Score, and Designation) display before the dimensions in the dimension group Characteristics (Body, Flavors, Drinkability).

What you can do

You can override the default ordering of dimensions, dimension values, and dimension groups (including reordering dimensions and dimension values within dimension groups) in IAP Workbench.

What up-front work must have been done to enable support of the feature

Before you can reorder dimensions, an administrator must run a baseline update.

Where in the IAP Workbench help the procedure is covered

"Specifying the presentation order of dimensions"

What must be done after the change to have the Endeca application pick it up

Your administrator must run another baseline update.

How to test the change

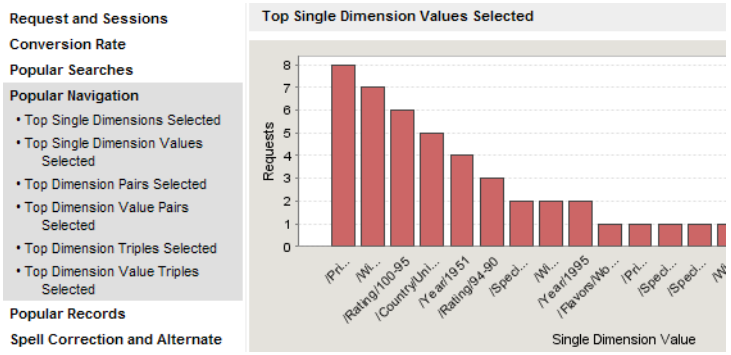
Look at the preview application (if the preview application is enabled for display) and confirm that the dimensions and their values are in the desired order.

Viewing reports

Reports allow you to look at what has happened on your site over the last day or week. Depending on how reports are configured at your site, you can answer questions like these:

- How much traffic is my site getting?
- How are visitors searching and browsing the site?
- How effective are their searching and browsing techniques?

Here is a sample report showing which dimensions were most navigated on:



The IAP Workbench Reporting page can display a single daily or weekly report or allow you to browse and view historical report archives.

To get valid and useful end-user data, your Endeca reports should be run using the production version of your Endeca application. Your technical team might provide you with a separate login to view production reports, or they might copy the production reports to your IAP Workbench machine.

What you can do

You can view the reports in IAP Workbench.

What up-front work must have been done to enable support of the feature

Your technical team must have defined which reports to generate and how often to generate them.

Where in the IAP Workbench help the procedure is covered

"Working with Endeca reports"

Chapter 3

Suggested Stop Words

Stop words are words that are set to be ignored by the Endeca MDEX Engine. Typically, common words like *the* are included in the stop word list. In addition, the stop word list can include the extraneous words contained in a typical question, allowing the query to focus on what the user is really searching for.

The following table provides a list of words that are commonly added to the stop word list; you may find it useful as a point of departure when you configure a list for your application.

a	do	me	when
about	find	not	where
above	for	or	why
an	from	over	with
and	have	show	you
any	how	the	your
are	I	under	
can	is	what	

In addition to some or all of the words listed above, you might want to add terms that are prevalent in your data set. For example, if your data consists of lists of books, you might want to add the word *book* itself to the stop word list, because a search on that word would return an impracticably large set of records.

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