



Einstein Search Recommendations - External FAQ

The purpose of this document is to provide customers and developers with details necessary to enable and leverage Einstein Search Recommendations within their storefront

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Einstein Search Recommendations Overview

This section provides an overview of Einstein Search Recommendations, the features that comprise it, and the business value provided by the feature-set.

What are Einstein Search Recommendations?

Einstein Search Recommendations personalizes type ahead search for each individual customer by automatically guiding them to the best search terms available. The guidance provided by Einstein Search Recommendations includes:

- Personalized search-term completion and correction
- Shopper recent search phrases
- Popular or trending search phrases
- Auto-suggestion of search phrases

The search phrase recommendations are provided by Einstein via machine learning which monitors customer searches and generates recommendations most likely to lead to product views.

What are the benefits provided by Einstein Search Recommendations?

Einstein Search Recommendations are designed to improve the search experience of your customers by:



- Presenting the most relevant search suggestions available
- Lowering the abandonment rate on the search results page
- Minimizing the likelihood of zero search results
- Increasing customer satisfaction with storefront search

Collectively, the elements of this feature reduce the likelihood of empty or low relevance search results being presented to customers. This means that when Einstein Search Recommendations are enabled, customers are more likely to find products in your storefront that they find relevant.

How are Einstein Search Recommendations presented to customers?

Einstein Search Recommendations are typically presented to customers via the type-ahead search fly-out menu. The following screen-captures demonstrate how search recommendations are rendered within our two reference architectures: SiteGenesis and Storefront Reference Architecture (SRFA).

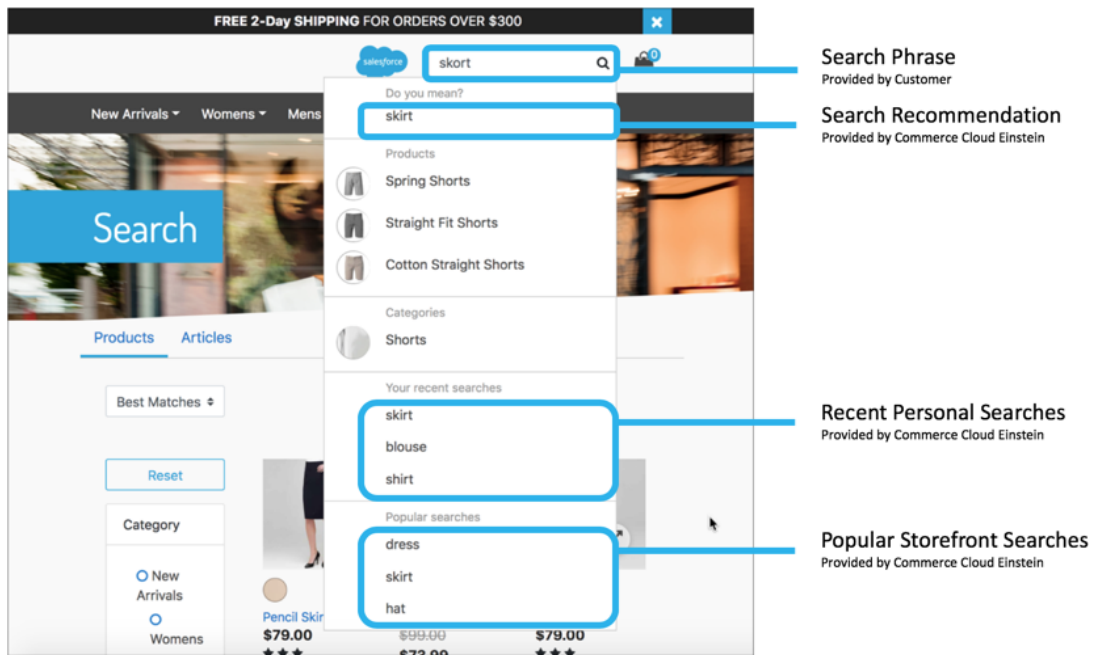


Figure 1: Einstein Search Recommendations via SFRA

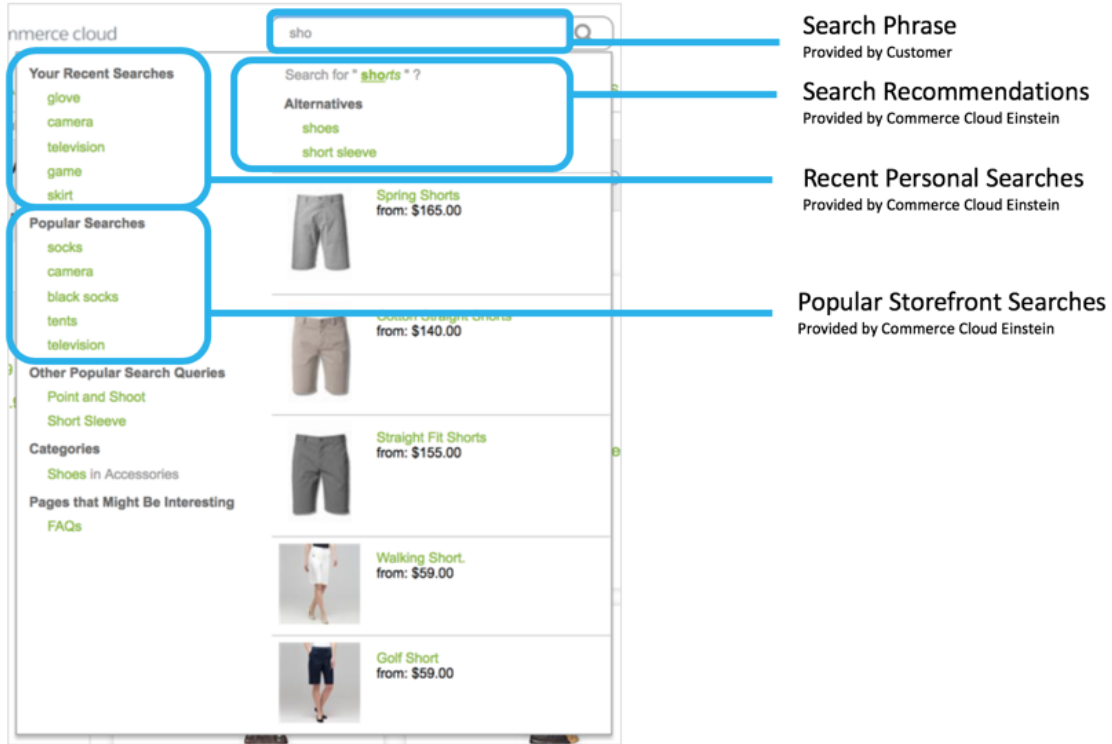


Figure 2: Einstein Search Recommendations via SiteGenesis

I currently have type-ahead suggestions enabled in my storefront. What has changed with this feature, and how are Einstein Search Recommendations different from what I have today?

Previously, search as you type (triggered by entering some characters in the search box) was based on searchable attributes -- specifically product catalog information including product name, short description, etc. The results could also be extended to present search results for product brands, catalog categories, and content pages.

Today, Einstein Search Recommendations are fueled in real time by each customer's geo-location, device type, and specific interactions with your site -- with the intent to generate personalized search phrases that surface the most relevant results possible. These results are generated by machine learning algorithms specifically designed to analyze search queries and customer browsing behavior -- and provide actionable recommendations based on this analysis.

Do customers have to pay to use Einstein Search Recommendations?

No. Einstein Search Recommendations is included in your Commerce Cloud premier contract. No additional costs or charges are incurred by activating Einstein Search Recommendations.



Implementation Options

This section shares guidance on implementing Einstein Search Recommendations, explains which features require storefront customization, and provides a recommended approach to implementing the complete feature-set.

What's involved with implementing the Einstein Search Recommendations?

Einstein Search Recommendations supports an incremental roll-out strategy where low-effort features can be implemented without requiring storefront customizations. Additional features can be incrementally implemented with various levels of storefront customization effort (depending on the feature).

Which Einstein Search Recommendations features require storefront customization?

The following table describes each of the features available via Einstein Search Recommendations and their implementation effort.

Feature Name	Requires Storefront Customization?	Level of Effort	Implementation Notes
Search Recommendations			
Search Term Auto Completion and Correction	No	None	Can be activated by enabling the "Einstein Search Recommendations" checkbox via the Search > Search Preferences display
Auto suggest of additional search phrases	Yes	Low	Requires minimal customization of the existing type-ahead search fly-out menu to render multiple search phrase suggestions
Recent and Popular Search Phrases			
Recent search phrases	Yes	Medium	Requires net-new customizations to the type-ahead search fly-out menu to retrieve and render Einstein generated recent search phrases
Popular search phrases	Yes	Low	Requires net-new customizations to the type-ahead search fly-out menu to retrieve and render Einstein generated popular search phrases; can be based on the recent search phrases implementation code

NOTE: The popular search phrases implementation effort estimate of "Low" is contingent on the successful implementation of the recent search phrases feature. Both features can leverage similar data-retrieval and rendering logic.

Do all four Einstein Search Recommendation features have to be implemented at once? Or can they be implemented incrementally?

The Einstein Search Recommendation features do not need to be implemented at once or in conjunction with each other. Each of the Einstein Search Recommendation features can be implemented independently without any dependencies of other features. The only prerequisite is that Einstein Search Recommendations must be enabled prior to implementing any features.



Does Salesforce have a recommendation on how to implement Einstein Search Recommendations?

Salesforce recommends that all features of Einstein Search Recommendations are implemented, as they are designed to improve the relevancy of search results presented to customers. The following task sequence represents an incremental approach to implementing all four core features.

1. **Enable Einstein Search Recommendations in your storefront.** This will allow the machine learning algorithm to consume search queries and identify search phrases to recommend. It will also begin to present search suggestions based on actual customer searches.
2. **Extend the search suggestions display to render multiple suggestions.** Building on the feature being enabled, the type-ahead search fly-out should be extended to render multiple search suggestions (vs. the single suggestion implemented by default).
3. **Implement recent search phrases.** Recent search phrases should be implemented in the type-ahead search fly-out menu to render a personalized list of search phrases submitted by storefront customers.
4. **Implement recent search phrases leveraging the recent search phrases customization.** Leverage the recent search phrases customization to implement popular search phrases. This feature will round-out the complete Einstein Search Recommendations feature-set and implementation time can be shortened by leveraging the customizations made while implementing recent search phrases.

As with any storefront customizations, please ensure that your team has adequate time to plan, implement, and test these features before deploying them to production.

Can I take advantage of Einstein Search Recommendations without customizing my storefront?

Yes. Enabling Einstein Search Recommendations without customizing the search type-ahead fly-out menu is recommended and will improve the relevancy of the initial suggestion provided to storefront customers. That said, Salesforce recommends that customers prioritize implementing all Einstein Search Recommendation features in their storefront.

Setting Up Einstein Search Recommendations

This section explains how to setup, configure, and test Einstein Search Recommendations from your storefront.

Are there any prerequisites that must be configured prior to enabling Einstein Search Recommendations?

Yes. The following feature prerequisites must be configured prior to enabling Einstein Search Recommendations. They include:

- Commerce Cloud Einstein for Salesforce B2C Commerce must be deployed via the production instance of your storefront.



- Einstein Catalog and Order Feed jobs must be enabled and regularly scheduled.
- Activity tracking (CQuotient) session cookies must be enabled within your storefront.
- Storefronts must leverage the type-ahead search fly-out menu.

If you have not deployed Commerce Cloud Einstein for Salesforce B2C Commerce and would like to, please follow the steps outlined in the [Einstein Deployment Guide](#) to enable Einstein via your storefront.

Are any storefront codebase changes required to enable or display Einstein Search Recommendations?

Yes and No. Depending on the Einstein Search Recommendation features that you would like to leverage -- development may be required.

- If you have type-ahead search enabled via your storefront, no development is required to enable search-term completion, auto-correction, or suggestions via the fly-out menu.
- If you would like to leverage the recent and popular search features, the type-ahead fly-out menu will need to be customized to leverage the new API methods which expose these recommendations.

As most customers have some form of type-ahead search enabled in their storefront and this feature can be deployed without development, we recommend that all customers enable Einstein Search Recommendations to take advantage of the search-term completion, auto-correction, and suggestions provided by this new feature.

How do I implement the recent and popular search features in my storefront?

Guidance is included in this FAQ on how to make the necessary changes to the search script business logic and appropriate rendering templates to enable the rendering of recent and popular search results in the type-ahead search fly-out menu. Prior to evaluating code changes, we recommend that customers first enable Einstein Search Recommendations from within Business Manager so that you can immediately take advantage of the search-term completion, auto-correction, and suggestions provided by the recommendation engine.

How do I enable Einstein Search Recommendations for my storefront sites?

Enabling Einstein Search Recommendations can be done from within Business Manager for each site supported by your primary instance group (PIG). Einstein Search Recommendations cannot be enabled in developer sandboxes. Please remember that the Einstein must first be [deployed at the site level](#) prior to enabling Einstein Search Recommendations.

To activate Einstein Search Recommendations, please log into Business Manager. Business Manager users must have the ability to administer and edit the search preferences for a given site.

- Select the site where this feature will be enabled
- Within that site, navigate to [Merchant Tools > Search > Search Preferences](#)
- Enable the [Einstein Search Recommendations](#) checkbox
- Replicate the Search Settings from the Staging to Production environment

The following screen-capture illustrates the location of the Einstein Search Recommendations checkbox that must be checked to activate this feature.

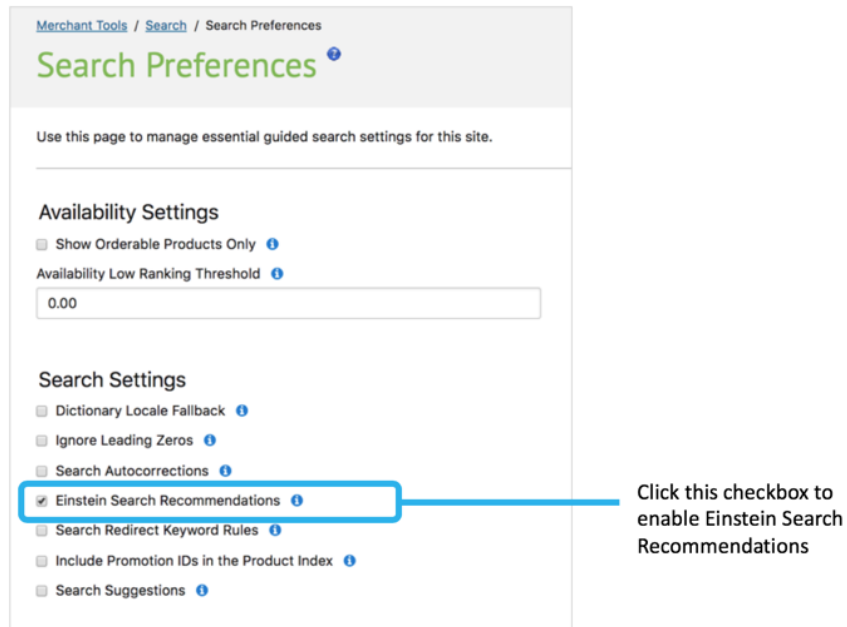


Figure 3: How to Enable Einstein Search Recommendations from within Business Manager

Important note: Updating the Einstein Search Recommendations checkbox in Business Manager just changes the process of auto-correction and term-completion using the native - non AI - capability (if disabled) or Einstein AI (if enabled). Popular Searches and Recent User Searches are controlled via Storefront Code only and do not rely on the checkbox.

Can customers test Einstein Search Recommendations on their sandboxes?

No. Customers can test Einstein Search Recommendations on Primary Instance Groups only.

How can I test the performance or suggestions generated by Einstein Search Recommendations?

Customers can analyze the influence of Einstein based auto-completion and search term corrections by leveraging the Search Index Query Testing Tool in Business Manager. To open the Search Index Query Testing Tool, please log into Business Manager.

- Select the site that you would like to test against
- Within that site, navigate to [Merchant Tools > Search > Search Index Query Testing](#)
- Enter the search team you'd like to test
- Select the "Search Autocorrections" checkbox to enable auto-corrections
- Examine the results presented by the index query testing tool and compare them to the storefront to validate experience consistency



Search Phrase
Provided by Customer

Figure 4: Using the Search Index Query Testing Tool

When a search phrase is submitted, the testing tool will document the performance and results of the various processors leveraged by the Salesforce B2C Commerce storefront search. If Einstein Search Recommendations are enabled, any auto-corrections made by Einstein should be captured and displayed in the processing results.

Search Phrase Auto-Correction
Provided by Commerce Cloud Einstein

Figure 5: Search Query Correction Performed by Einstein

At the bottom of the query testing tools will appear a listing of products that match the search phrase. Above this product listing, you will find a label titled “Did you mean” that includes the search suggestions generated by Einstein.

- The suggestions rendered in the testing tool should also be presented to customers via the type-ahead search fly-out menu
- The sequence in which suggestions are displayed is ranked from highest relevance to lowest relevance



Search Results

Total Hits: 24

Deepest Common Category: Storefront Catalog - EN

Did You Mean: shorts, shoes, short sleeve

Score	Product ID	Product Name	Brand	Type	Status	Details	View
1.00	72516759	Spring Shorts		Variation Master	🔍 📄 📄 📄	🔍	📄
0.92	86736845	Cotton Straight Shorts		Variation Master	🔍 📄 📄 📄	🔍	📄
0.92	54736828	Straight Fit Shorts		Variation Master	🔍 📄 📄 📄	🔍	📄
0.90	25697782	Walking Short.		Variation Master	🔍 📄 📄 📄	🔍	📄
0.89	25591979	Golf Short		Variation Master	🔍 📄 📄 📄	🔍	📄
0.85	83536828	Summer Straight Fit Shorts		Variation Master	🔍 📄 📄 📄	🔍	📄
0.83	25502192	Short Sleeve Shell		Variation Master	🔍 📄 📄 📄	🔍	📄
0.83	25593154	Short Sleeve Cardigan		Variation Master	🔍 📄 📄 📄	🔍	📄
0.83	25565935	Short Sleeve Shell		Variation Master	🔍 📄 📄 📄	🔍	📄
0.82	25592309	Long Walking Short		Variation Master	🔍 📄 📄 📄	🔍	📄

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Search Suggestions
Provided by Commerce Cloud Einstein

Figure 6: Search Query Search Results (including suggestions generated by Einstein)

Working With Einstein Search Recommendations

This section provides additional information on managing Einstein Search Recommendations as part of your storefront -- including how they are generated, A/B testing options, and comparing search query performance before / after enabling Einstein Search Recommendations.

How are Einstein Search Recommendations generated?

Search Recommendations are generated by applying machine learning algorithms to the viewSearch activities Einstein receives from your site and from the specific customer searching. These algorithms are used to identify which search phrases are most relevant to that customer. By implementing the search recommendations via the type-ahead search, the generated recommendations can be presented to customers before their search query is completed or as it is being completed.

Can customers' run A/B tests on Einstein Search Recommendations?

Yes, customers can run A/B testing on Einstein Search Recommendations using a 3rd party A/B testing tool. Salesforce B2C Commerce's native A/B testing tool does not currently support the A/B testing of Einstein Search Recommendations.

How often do personalized Search Suggestion results get updated?

The personalized search suggestion results are updated in real time. Einstein gathers the search-data that the shopper types within the search bar, then use that data to update and personalize the search results and generated recommendations.



What happens if the customer searching has no browsing history on the site at time of search?

The Einstein Search Phrase suggested will be personalized based on the site-wide popular search activity for the customer's location and device type.

For example, if the customer searches "swe" and that user has not searched sweater, sweatshirt, or sweat pants, Einstein will look at the search data for phrases starting with 'swe' for the device and geo. If there is enough information at that level, a phrase will be returned. If, however, there is not enough search data to focus on device and geo, Einstein will use the data across a larger area and across all devices to return a search phrase.

Is there a fallback solution if the Einstein Search Recommendations is not working properly?

Yes. The search results will continue to display search suggestions powered by the native solution that we currently offer. Shoppers will still retrieve search results, but the results will not be personalized.

Does the Einstein Search Recommendation Processor modify the search terms submitted by customers via the search box?

No. The Einstein Search Recommendation Processor in the Search Index Query Testing tool shows only the result of the api call. However, the term provided by the Einstein API is used for the further search processing and all subsequent processors (i.e. synonyms, stemming, etc.). This allows a search to be executed with the proposed term by Einstein and merchants can still define synonyms or stopwords that will in-turn modify the search query. Please note that Einstein provided queries are not considered by blocklisted terms.

What languages are supported by Einstein Search Recommendations?

Einstein Search phrase suggestions, recent searches, and popular searches will work for ALL supported platform languages.

Does Einstein Search Recommendations work for API first use cases / Headless / Composable Commerce?

No, Einstein Search Recommendations are built for SiteGenesis / SFRA based storefronts and do not work for API first / headless use cases.

What is the length of time that Einstein Search Recommendations will personalize search autocomplete based on search / browse activity?

The length of time that Einstein Search Recommendations will personalize search autocomplete based on search / browse activity is 1 week. If there is no new activity for 1 week the user will be treated as a new user.

What is the look back period for popular searches?

The look back period represents how far back in time Einstein will go to identify popular searches. Einstein will begin leveraging data to render its popular search phrases since it has first been deployed and has been properly receiving viewSearch activities. The look back period for updating popular searches is typically 7 days.



Can Einstein Search Recommendations suggest content?

No. Einstein Search phrase suggestions only offers suggestions on search phrases. Content can be presented by executing a standard content search via the ContentSearchModel.

Does Einstein Search Recommendations order the product images displayed in my storefront's search flyout?

Not directly. The Product images are often ordered based on the keyword search sorting rule applied to your site. You may infuse personalization into the product order displayed by applying the Predictive Sort sorting rule to your keyword search sorting rule active on site. Indirectly, the Einstein Search phrase suggested will be used as the keyword that the sorting rule is then applied to.

Can I examine search recommendation results via the storefront?

Yes. You can inspect search-recommendation results via the Commerce Cloud Recommendations Validator ([Infocenter](#); available via the [Chrome Web Store](#)). The following image provides a snapshot of the information presented via the Recommendations Validator Chrome extension.

The screenshot shows a browser window with the URL `?q=sweater&lang=en_US`. The extension interface includes tabs for 'Activities', 'Recommendations', and 'Emails'. A notification 'viewSearch is ok' is visible. Below is a table of search details:

Client ID	bbms-NT0
Activity	viewSearch
Timestamp	1537411931631
Callback	CQuotient_act_callback0
Cookie ID	abYHeUmemnK3InlfcqbzZInYi0
User ID	
searchText	sweater
suggestedSearchText	sweater
Products	id::25518241 sku:: textRelevance::1.0;;id::25517766 sku:: textRelevance::1.0;;id::25502266 sku:: textRelevance::0.9916183;;id::25591195 sku:: textRelevance::0.9916183;;id::25502240 sku:: textRelevance::0.9231078;;id::25493689 sku:: textRelevance::0.90752774;;id::25518210 sku:: textRelevance::0.8594942;;id::25589266 sku:: textRelevance::0.8594942;;id::25589220 sku:: textRelevance::0.8594942;;id::25484265 sku:: textRelevance::0.851892;;id::25502346 sku:: textRelevance::0.84463936;;id::25502692 sku:: textRelevance::0.80581343
showProducts	true
personalized	false
Refinements	[]
sortingRule	best-matches
imageUUID	__UNDEFINED__
Referrer	https://ndeltorto-inside-na04-dw.demandware.net/s/SiteGenesis/search?q=sweater&lang=en_US
CQ UUID	89c2c890-ac82-11e8-a588-37d125fa3c89

Figure 7: Search Suggestions Captured by the Recommendations Validation Chrome Extension



The 'viewSearch' activity represents recommendations generated for keyword search. Relevant viewSearch metadata includes:

- **Cookie ID.** Anonymous cookie id generated for the shopper
- **searchText.** The term entered into search by the customer
- **suggestedSearchText.** The term autocorrected and redirected to

How can I compare Einstein Search Recommendations to my previous storefront search experience?

The easiest way to compare search experiences is by leveraging the [Search Index Query Testing Tool](#) to examine search behavior when Einstein Search Recommendations are and are not enabled. To compare both versions of search behavior:

Testing Search Behavior with Einstein Search Recommendations Enabled

- Confirm that Einstein Search Recommendations are enabled via the [Search > Search Preferences](#) display.
- Navigate to the Quest Testing Tool.
- Select a search term to test (ex. 'sho').
- Enter your search term and select the 'Search Autocorrections' checkbox.
- Execute the search via the Query Testing Tool, and capture the results.

Search Results

Total Hits: 24

Deepest Common Category: Storefront Catalog - EN

Did You Mean: shorts, shoes, short sleeve

Score	Product ID	Product Name	Brand	Type	Status	Details	View
1.00	72516759	Spring Shorts		Variation Master	🔍 🔍 🔍 🔍	🔍	🔍
0.92	86736845	Cotton Straight Shorts		Variation Master	🔍 🔍 🔍 🔍	🔍	🔍
0.92	54736828	Straight Fit Shorts		Variation Master	🔍 🔍 🔍 🔍	🔍	🔍
0.90	25697782	Walking Short.		Variation Master	🔍 🔍 🔍 🔍	🔍	🔍
0.89	25591979	Golf Short		Variation Master	🔍 🔍 🔍 🔍	🔍	🔍
0.85	83536828	Summer Straight Fit Shorts		Variation Master	🔍 🔍 🔍 🔍	🔍	🔍
0.83	25502192	Short Sleeve Shell		Variation Master	🔍 🔍 🔍 🔍	🔍	🔍
0.83	25593154	Short Sleeve Cardigan		Variation Master	🔍 🔍 🔍 🔍	🔍	🔍
0.83	25565935	Short Sleeve Shell		Variation Master	🔍 🔍 🔍 🔍	🔍	🔍
0.82	25592309	Long Walking Short		Variation Master	🔍 🔍 🔍 🔍	🔍	🔍

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Search Suggestions
Provided by Commerce Cloud Einstein

Figure 8: Search Query Search Results (including suggestions generated by Einstein)

Testing Search Behavior with Einstein Search Recommendations Disabled

- Disable Einstein Search Recommendations by de-selecting the preference checkbox found in the [Search > Search Preferences](#) display.
- Return to the Query Testing Tool and re-enter your testing search term (ex. 'sho')
- Select the 'Search Autocorrections' checkbox.



- Execute the search via the Query Testing Tool, and capture the results.

Search Results

Total Hits: 21

Deepest Common Category: Standard Catalog - EN

Did You Mean: shoot

Score	Product ID	Product Name	Brand	Type	Status	Details	View
1.00	kodak-c1013	Kodak EasyShare C1013 Digital Point and Shoot Camera	Kodak	Option Product	🔍 📄 📄 📄	🔍	📄
0.99	kodak-z1015	Kodak EasyShare Z1015 Digital Point and Shoot Camera	Kodak	Option Product	🔍 📄 📄 📄	🔍	📄
0.99	kodak-z712	Kodak EasyShare Z712 Digital Point and Shoot Camera	Kodak	Option Product	🔍 📄 📄 📄	🔍	📄
0.99	kodak-z8612	Kodak EasyShare Z8612 Digital Point and Shoot Camera	Kodak	Option Product	🔍 📄 📄 📄	🔍	📄
0.98	nikon-s116	Nikon Coolpix L16 Digital Point and Shoot Camera	Nikon	Option Product	🔍 📄 📄 📄	🔍	📄
0.97	kodak-v1273	Kodak EasyShare V1273 Digital Point and Shoot Camera	Kodak	Option Product	🔍 📄 📄 📄	🔍	📄
0.97	canon-powershot-g10	Canon PowerShot G10 Digital Point and Shoot Camera	Canon	Option Product	🔍 📄 📄 📄	🔍	📄
0.97	sony-cybershot-w120	Sony Cyber-shot® W120 Digital Point and Shoot Camera	Sony	Option Product	🔍 📄 📄 📄	🔍	📄
0.97	nikon-s60	Nikon Coolpix S60 Digital Point and Shoot Camera	Nikon	Option Product	🔍 📄 📄 📄	🔍	📄
0.96	canon-powershot-e1	Canon PowerShot E1 Digital Point and Shoot Camera	Canon	Option Product	🔍 📄 📄 📄	🔍	📄

Showing 1 - 10 of 21 items Show All Items 1 2 3 Next >>

Search Suggestions
 Provided by Standard Search – and not generated by Commerce Cloud Einstein

Figure 9: Search Query Search Results (including suggestions not generated by Einstein)

In the above example, the Search Suggestions generated by Commerce Cloud Einstein tie back to relevant product searches. Comparatively, the Search Suggestions generated by standard search perform a dictionary match on the phrase -- finding product matches primarily based on the product's title.

Testing the Search Phrase “sho” on SiteGenesis		
	Standard Search	Einstein Search Recommendations
Autocorrection Result	shoot	short
Search Suggestions Provided	shoot	shorts shoes short sleeve

The result is that -- for the search phrase “sho”, Einstein Search Recommendations provides an additional three search terms that represent three separate and distinct product searches. Standard Search only offered one search alternative that was dictionary driven (vs. search driven through machine learning).

Can customers hire a Salesforce B2C Commerce Technical Solution Designer (SI) to enable Einstein Search Recommendations within their PIG environment?

Yes. Customers can hire a Salesforce B2C Commerce SI to assist them with enabling Einstein Search Recommendations within their Production environment. Customers may contact their Success Managers to get more information about hiring an SI.



Implementing Multiple Search Suggestions

This section provides technical guidance on how to extend the search suggestions rendered in the search type-ahead fly-out menu to include multiple suggestions vs. the default singular suggestion provided.

What is involved with increasing the number of search suggestions presented in the search type-ahead fly-out menu?

To render multiple search suggestions in the search type-ahead fly-out menu, the rendering logic which displays the suggestions must be extended to render all suggestions vs. only the first one. The SiteGenesis suggestions.isml template contains the necessary logic to iterate and render all of the suggestions returned by the ProductSearchModel's [getSearchPhraseSuggestions\(\)](#) method.

The following code-sample demonstrates how to iterate over the collection of suggested phrases provided by the ProductSearchModel within an .isml template -- and render the suggested phrases provided by Einstein Search Recommendations. Please review the SiteGenesis suggestions.isml template for a real-world example of this customization.

```
<iscomment>Loop over the collection of suggested phrases returned</iscomment>
<iscomment>by the ProductSearchModel</iscomment>
<isloop items="{suggest.product.phrases}" alias="phrase" status="loopState" >

    <iscomment>Is this the first suggestion?</iscomment>
    <isif condition="{loopState.first}">

        <iscomment>Open the UI display</iscomment>
        <div class="suggestion-container">

            <iscomment>Render the first suggestion</iscomment>
            <a class="hit" href="{URLUtils.url('Search-Show', 'q', phrase.getPhrase())}">
                <isprint value="{phrase.getPhrase()}" />
            </a>

        <iselse>

            <iscomment>Render the other search suggestions</iscomment>
            <a class="hit" href="{URLUtils.url('Search-Show', 'q', phrase.getPhrase())}">
                <isprint value="{phrase.getPhrase()}" />
            </a>

            <iscomment>Is this the last suggestion?</iscomment>
            <isif condition="{loopState.last}">

                <iscomment>Close out the suggestion container</iscomment>
                </div>

            </isif>

        </isif>

    </isloop>
```



Implementing Recent and Popular Searches

This section provides technical guidance on how to implement recent and popular searches within the search type-ahead fly-out menu.

What is available to developers to better understand the new functionality available for the search flyout?

After you have enabled Einstein Search Suggestions in the steps above, the following guidance is also available to further customize your search flyout with the personalized search recommendations discussed in this document:

- [Einstein Search Suggestions](#)
- [Search Suggestions for Developers](#)
- [SuggestModel](#)

The Commerce Cloud script API has been extended to offer improved search phrase suggestions as well as new suggestions in the form of recent and popular search phrases. New API methods have been added to the [ProductSearchModel](#) and [SuggestModel](#) classes which expose the following methods that can be leveraged to obtain generated search suggestions:

Function Name	How To Use It / What is Returns
ProductSearchModel Search Phrase Recommendation Changes	
This method should be used to generate search phrase recommendations via a searchModel. This method is the default recommended manner in which search phrase recommendations should be generated.	
getSearchPhraseSuggestions	Use this method to obtain a list of suggested search phrases driven by a shopper's search results. Returns an iterator/list of recommended search phrases informed by their search results.
Suggest Model Search Phrase Recommendation Changes	
These methods should be used to prescriptively present the specific recent and popular search phrase recommendations to customers. They should only be used in scenarios where the customer would benefit from being given a prescriptive list of search phrase suggestions grouped by type (ex. product, content, category, brand, recent, and popular).	
getRecentSearchPhrases	Use this method to obtain a list of personalized search phrases that the current user recently entered. Returns an iterator/list of recent search phrases entered by the current user.
getPopularSearchPhrases	Use this method to obtain a list of search phrases that are popular on the site. The search phrases are specific to the region (based on user's IP address), language (locale) and the user's browser type (agent). Returns an iterator/list of popular search phrases specific to the region/locale / locale/user's type.



What Changes Need to Be Made to a Storefront to Implement Search Phrase Recommendations?

Developers can access and download sample code snippets for the SiteGenesis reference architecture via github. This section of the FAQ explains:

- SiteGenesis product search script changes incorporating the new search phrase suggestion features
- Rendering template changes to the no search results page that incorporates the new search phrase suggestion features
- SiteGenesis search phrase suggestions script business logic changes incorporating the new recent and popular search suggestion features
- Rendering template changes to present the recent and popular search suggestions to customers as part of their search experience

Please review this change-set for a comprehensive list of the scripts, isml templates, and CSS / property files modified.

Rendering Search Phrase Suggestions Generated by Einstein Recommendations:

app_storefront_core / cartridge / templates / default / search / nohits.isml contains a significant refactoring which:

- Leverages the new ProductSearchModel.getSearchPhraseSuggestions() method to retrieve the search phrase suggestions to render in the no search results page.
- Updates the rendering of search phrase suggestions in the no search result pages so that first and additional search term suggestions are displayed to the customer.

NOTE: This following code samples represent an explanation of changes to the *SiteGenesis Reference Architecture* designed to accommodate these new features. A reference integration for the new *Storefront Reference Architecture* is available out of the box.

Example Script Methods to Retrieve Search Phrase Suggestions

The following script code examples demonstrate how to leverage the getSearchPhraseSuggestions() method to retrieve the collection of suggestions based on the known contents of products in the storefront catalog.

```
// Retrieve the product / catalog-driven search phrase recommendations from a searchModel
var searchSuggestions = ProductSearchModel.getSearchPhraseSuggestions();

// Were any suggested search phrases found?
if (searchSuggestions.hasSuggestedPhrases()) {

    // If so, retrieve the collection of suggested search phrases -- for iteration
    var searchPhrases = searchSuggestions.getSuggestedPhrases();

    // Iterate over each of the phrases
    while (searchPhrases.hasNext()) {

        // Create a reference to the current search phrase
        var suggestedPhrase = searchPhrases.next();

        // From here, the individual properties of a given search-phrase
        // can be interrogated; see the SuggestedPhrase Script API docs
        // for the comprehensive list of methods and properties available
```




```
    }  
  }  
  
  // Were any suggested search terms found?  
  if (searchSuggestions.hasSuggestedTerms()) {  
  
    // If so, retrieve the collection of suggested search phrases for iteration  
    var searchTerms = searchSuggestions.getSearchTerms();  
  
    // Iterate over each of the search terms  
    while (searchTerms.hasNext()) {  
  
      // Create a reference to the current search term  
      var searchTerm = searchTerms.next();  
  
      // From here, the individual collection of search terms can be  
      // interrogated; see the SuggestedTerms and SuggestedTerm Script API  
      // docs for the comprehensive list of methods and properties available  
  
    }  
  }  
}
```

Prescriptively Rendering the Recent and Popular Search Suggestions

app_storefront_core / cartridge / scripts / search / SearchSuggest.js contains implementation references to the getRecentSearchPhrases() and getPopularSearchPhrases() methods. The script library accepts a given search phrase and then assembles a model containing various suggestions (including the recent and popular suggestion categories added in release 18.7).

Source Code Location for Search Suggestion Logic Changes

The sitegenesis reference architecture's SearchSuggest.js script was extended to incorporate these new Einstein data-driven search suggestion features.

- Two new prescriptive methods (getRecentSearchPhrases() and getPopularSearchPhrases()) were added to searchSuggest
- The script was extended to expose the recent and popular search phrases via its return results

Example Script Methods to Retrieve Recent and Popular Searches

The following script code examples demonstrate how to extend the SearchSuggest.js script to include the latest Einstein Search Recommendation features.

```
/**  
 * @function getRecentSearchPhrases  
 * @description Accepts an existing suggestModel and returns the collection of recent searches  
 * for the current user (provided that they exist)  
 * @param {dw.suggest.SuggestModel} Accepts an existing suggestModel for the current search  
 * @returns {dw.util.Iterator} Returns a collection containing the recent search phrases  
 **/  
function getRecentSearchPhrases(suggestModel) {  
  
  // Retrieve the recent search phrases from the suggest model  
  var recentSearchPhrases = suggestModel.getRecentSearchPhrases();  
  
  // Were any recent search phrases found for this user?  
  if (!recentSearchPhrases) {  
    return {  
      available: false  
    };  
  }  
  
  // Otherwise, return the recent search phrases
```



```
return {
  available: recentSearchPhrases.hasNext(),
  phrases: recentSearchPhrases
};
}

/**
 * @function getPopularSearchPhrases
 * @description Accepts an existing suggestModel, and returns the collection of popular searches
 * generated by Einstein (for the current site / locale / browser -- provided that they exist)
 * @param {dw.suggest.SuggestModel} Accepts an existing suggestModel for the current search
 * @returns {dw.util.Iterator} Returns a collection containing the popular search phrases
 */
function getPopularSearchPhrases(suggestModel) {

  // Retrieve the recent collection of popular search phrases
  var popularSearchPhrases = suggestModel.getPopularSearchPhrases();

  // Were any popular search phrases found?
  if (!popularSearchPhrases) {
    return {
      available: false
    };
  }

  // Otherwise, return the collection of retrieved popular searches
  return {
    available: popularSearchPhrases.hasNext(),
    phrases: popularSearchPhrases
  };
}
```

Template Changes to Render Recent and Popular Search Suggestions

app_storefront_core / cartridge / templates / default / search / suggestions.isml leverages the SearchSuggest.js script to render recent and popular search phrases within the suggestions display.

Source Code Location for Search Suggestion Display Changes

The sitegenesis reference architecture's suggestions.isml template was extended to display recent and popular search phrases to customers.

- Recent searches are now rendered first in the list of available search suggestions
- Popular searches are now rendered second in the list of available search suggestions

Example ISML to Render Recent / Popular Searches

The following code samples demonstrate how to render the recent and popular search suggestions for customers via the suggestions.isml template. Please note that these samples leverage the return object generated by the SearchSuggest.js script.

```
<iscomment> Your Recent Searches </iscomment>
<isif condition="{suggest.recent.available}">
  <div class="hitgroup">
    <h4 class="header">${Resource.msg('search.suggest.recentqueries', 'search', null)}</h4>
    <isloop items="{suggest.recent.phrases}" alias="phrase">
      <a class="hit" href="{URLUtils.url('Search-Show', 'q', phrase.getPhrase())}"><isprint
value="{phrase.getPhrase()}" /></a>
    </isloop>
  </div>
</isif>

<iscomment> Popular Searches </iscomment>
<isif condition="{suggest.popular.available}">
  <div class="hitgroup">
    <h4 class="header">${Resource.msg('search.suggest.popularqueries', 'search', null)}</h4>
```



```
<isloop items="{suggest.popular.phrases}" alias="phrase">
  <a class="hit" href="{URLUtils.url('Search-Show', 'q', phrase.getPhrase())}"><isprint
value="{phrase.getPhrase()}" /></a>
</isloop>
</div>
</isif>
```

Can customers test Einstein Search Recommendations on their sandboxes?

No. Customers can test Einstein Search Recommendations on Primary Instance Groups only.

How do I implement Einstein Search Recommendations on SFRA?

Cartridge guidance may be found in the SFRA base cartridge; please review the code for the SearchServices.js library for implementation details. The latest version of SFRA supports Einstein Search Recommendations -- and an example of the implementation can be viewed by downloading and setting-up the latest version of the Storefront Reference Architecture.

NOTE: A more detailed implementation guide for SFRA will be developed in the future.

Troubleshooting

This section provides guidance on how to troubleshoot issues

What are the anticipated issues storefront customers may experience related to Einstein Search Recommendations?

1. **All shoppers are getting the same search results and suggestions.**
First, please check if your storefront is caching the search type-ahead fly-out menu.
 - Make sure that you are not adding a cache tag on the template.
 - If you are caching due to performance concerns, check if removing cache actually affects the performance results.

Verify your code implementation, make sure you are properly using the new Script APIs.

2. **Why am I not seeing results (recent, trending and/or personalized)?** First, check that the viewSearch event is firing on the site when a shopper submits a search. Additionally, please verify your code implementation, make sure you are properly using the new Script APIs.
3. **Seeing suggestions in unexpected languages (e.g., Spanish recommendations on an English site).** This is likely expected behavior, it means you have shoppers who are searching in a different language. Open a support ticket and provide screenshots and steps to reproduce so that the Commerce Cloud support team can start investigating the issue.

How can customers troubleshoot Einstein Search Recommendation-related issues?

Always check that Commerce Cloud Einstein is configured on your Production site by examining the following configuration areas of your environment.



1. Use the [Einstein Deployment Dashboard](#) in [Business Manager](#) > [Administration](#) to check if that site is properly configured.
2. Make sure that the Catalog and Order Feed ran at least once and is scheduled to continually run on a regular interval.
3. Due to GDPR Laws, check if the activity tracking cookies are enabled.
 - Check if the DoNotTrack cookie is set to True.
 - Due to GDPR laws, we cannot change this if the shopper decided to opt-out of tracking. As a result, a search personalization will not be provided and the fallback solution will be used.