Section 5: Leverage Adobe Target recommendations (11%)

This toolkit is designed for Master Exam Aspirants. There are 8 Modules. Study 2 modules per week to stick to schedule. Technical Parts of applications are depicted in Videos, you can learn more about them from experience League. You can visit Get prep page to understand the contents and anticipate the learning journey.

Recommendations

Adobe Target Recommendations activities automatically display products, services, or content that might interest your visitors based on previous user activity, preferences, or other criteria. Target Recommendations helps direct visitor to relevant items they might otherwise not know about. Recommendations lets you provide your visitors with relevant content at the right time and in the right place.

NOTE

Recommendations activities are available as part of the Target Premium solution. They are not available in Target Standard without a Target Premium license.

If you currently have Recommendations Classic, see Recommendations Classic versus Recommendations Activities in Target Premium for more information about the two solutions.

Recommendations helps you optimize and customize real-time suggestions across channels, apps, pages, email messages, and other delivery options to increase engagement and conversion while reducing management effort.

Recommendations helps you:

- Create sophisticated criteria (rules) to automate recommendations

- Automatically display the recommendations by using a few JavaScript snippets

- Test and optimize the recommendations criteria and designs that display the recommendations

- Report on the results of your recommendations activities

The following illustration shows recommendations on a web page:
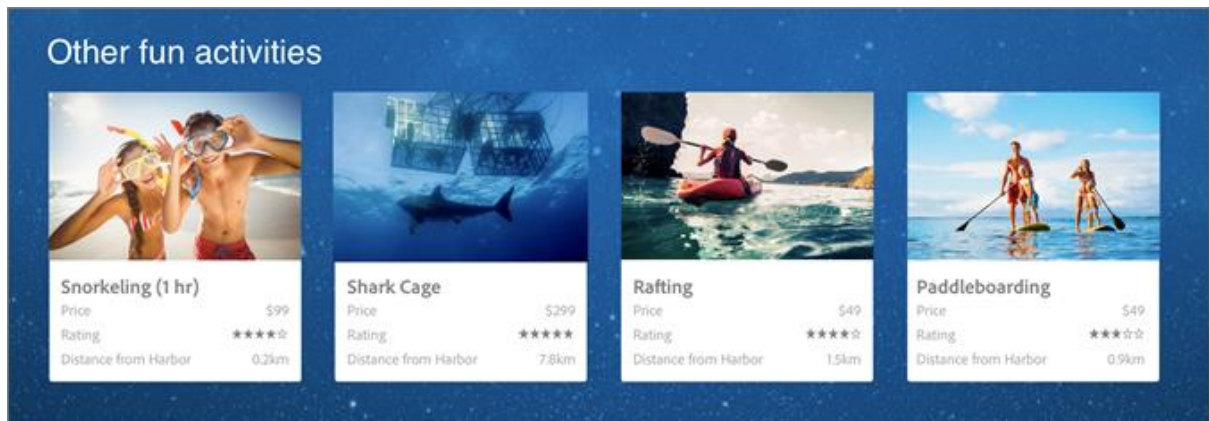
A recommendation determines how a product is suggested to a visitor, depending on that visitor's activities on the site. For example:

Desired Action	Recommendation
Encourage people who purchase a backpack to consider buying hiking shoes and trekking poles.	Create a recommendation that shows items that are often purchased together, using the "People who bought this also bought that" criteria.
Increase the time visitors spend on your media site by recommending media content similar to what they are watching.	Create a recommendation that suggests other videos, using the "People who viewed this viewed that" criteria.
Suggest that customers who viewed information about savings plans at your bank also read about IRA accounts.	Show other products people purchased after viewing one product without showing the first product in the recommendations, using the "people who viewed this also bought" criteria.

For more information about these and other Recommendations criteria, see Criteria.

Terms

Before you get started using Recommendations, it is helpful to become familiar with some of the terms used in this section. Don't worry if you don't fully understand these terms yet, you'll become more familiar with them as you set up your Recommendations activities.

Term	Definition
Activity	Activities in Target let you personalize content to specific audiences and test page designs. Recommendations is just one of the many activity types available in Target. For more information, see Target activity types.

Term	Definition
Entities	Entities refer to the items you want to recommend. Entities can be anything such as products, content (articles, slide shows, images, movies, and tv shows), job listings, restaurants, and so forth. For more information, see Entities.
Feeds	Feeds are used to get entities imported into Recommendations. Entities can be sent using CSV files, the Google Product Search feed format, and Adobe Analytics product classifications. For more information, see Feeds.
Catalog	Catalogs refer to your entire product set (entities). Your catalog can contain many collections–a way to organize your products in logical buckets.
Collection	Collections refer to a set of similar or related items, such as a single product category. However, you can group whichever items into a category that makes sense to your business, such as products in a certain price range or color, or items that are likely to be interesting in a particular geographical area. For more information, see Collections.
Criteria	Criteria are rules that determine which products to recommend based on a predetermined set of visitor behaviors. A few examples of criteria include: • People Who Bought This, Bought That • People Who Viewed This, Viewed That • Items with similar attributes • Last Purchased Item • Favorite Category For more information, see Criteria.
Designs	Designs define the appearance of the recommendations in a Recommendations activity, such as a row, column, table, or grid. The illustration at the top of this article shows a 4 x 1 design. For more information, see Create a design.

Term	Definition
Locations	Locations refer to a specific content area on a webpage, mobile app, or email where you run an activity for personalization and optimization purposes.
Audiences	Audiences are groups of similar activity entrants who will see a targeted activity. An audience is group of people with the same characteristics, such as a new visitor, a returning visitor, or returning visitors from the Midwest. The Audience feature allows you to target different content and experiences to specific audiences to optimize your digital marketing by displaying the right messages to the right people at the right time. For more information, see Audiences.
Recommendations as an offer	A feature that lets you include recommendations inside A/B Test (including Auto-Allocate and Auto-Target) and Experience Targeting (XT) activities. For more information, see Recommendations as an offer.

Training video: Activity Types Overview

This video explains the activity types available in Target Standard/Premium. Recommendations is discussed beginning at 7:20.

- Describe the types of activities included in Adobe Target

- Select the appropriate activity type to achieve your goals

- Describe the three-step guided workflow that applies to all activity types

Adobe Target Basics Webinar: Introduction to Recommendations Tutorial

The *Introduction to Recommendations* webinar includes an in-depth exploration of how to leverage the value of Adobe Target Recommendations. Find out how this Target activity automatically displays products or content that might interest your customers by optimizing real-time suggestions based on previous visits. Further, dive into the Target UI for a step-by-step overview of how to build a Recommendations activity.

Recommendations FAQ

List of frequently asked questions (FAQs) about Adobe Target Recommendations activities.

Why does Catalog Search not show the correct results when I search on a custom attribute with a numeric value?

When you perform a catalog search on a custom attribute with a numeric value, the results treat the custom attribute to be a string type instead of a numeric value.

Currently, there is no functionality available that allows customers to change the type of an attribute. To make a change, open a customer issue referencing the attributes that need the type changed from string to numeric.

How long does it take for updates to items in my catalog to be reflected on my site?

The time frame and results vary, depending on how the items are updated.

Source Details

Item attributes updated via mbox or API

Recommendations are updated within 15 minutes.

Existing recommendations and item attributes are shown until updates are available.

Catalog Search is updated after catalog index (3-8 hours).

Item attributes updated via feed

Recommendations are updated after feed ingest (2-8 hours).

Existing recommendations and item attributes are shown until updates are available.

Catalog Search is updated after feed ingest (2-8 hours) and after subsequent catalog index (3-8 hours). Catalog Search is updated within 5-16 hours total.

Item deleted from the catalog via Target UI or API

Recommendations are updated within 15 minutes.

Existing recommendations and item attributes are shown until updates are available.

Catalog Search is updated after catalog index (3-8 hours).

Item added to the catalog via mbox or API

Recommendations are updated after algorithm run. Algorithm runs are scheduled every 12 hours for 1-2 day algorithms and every 24 hours for 7+ day algorithms.

Existing recommendations are shown until updates are available if the added item is not a requested key.

Backup recommendations are shown until updates are available if the added item is a requested key.

Catalog Search is updated after catalog index (3-8 hours).

Item added to the catalog via feed

Recommendations are updated after the feed is ingested (2-8 hours). Subsequent algorithm runs are scheduled every 12 hours for 1-2 day algorithms and every 24 hours for 7+ day algorithms. Recommendations are updated within 2-32 hours total.

Existing recommendations are shown until updates are available if the added item is not a requested key.

Backup recommendations are shown until updates are available if the added item is a requested key.

Catalog Search is updated after feed ingest (2-8 hours) and after catalog index (3-8 hours). Catalog Search is updated within 5-16 hours total.

After importing a feed file, or after receiving entity updates via API or mbox, the following changes are reflected in under 60 minutes:

If an item was previously excluded but should now be included, the item will be included on the next algorithm run (12-24 hours).

This situation occurs because Target applies exclusions both online and offline. When an item is newly excluded, the online exclusion applies quickly. When an item is newly included, the online exclusion goes away quickly but the offline exclusion doesn't go away until the next algorithm run.

If an item was previously included but should now be excluded, the item is excluded per the "Item attributes updated…" time line discussed above depending on feed source (15 minutes via mbox/API or 12-24 hours via feed).

The following changes are not reflected until the next algorithm run occurs (within 12-24 hrs):

Item attributes used in the Collection rules used for the activity.

Item attributes used in a promotion based on an attribute or collection associated with the activity.

Item category that the item appears in for a "Current Category" or "Favorite Category" in the Top Sellers or Most Viewed algorithm.

Ranking of recommended items when the attribute changed is a custom attribute that is used as the custom key for an algorithm.

Ranking of recommended items based on one or more changed attributes when the recommendation logic is "Items with similar attributes," when "Content Similarity" weighting factors are used, or when "Attribute Weighting" factors are used.

NOTE

A feed file is considered imported when its status changes from "Importing Items" to "Preparing Search Index Updates". Updates can take more than 60 minutes to be reflected in the Catalog Search user interface; Catalog Search is up to date when the feed status changes to "Updates Completed".

Even if Catalog Search is not yet up to date, your site reflects updates on the time frames listed above. The most recent Catalog Search index update time is displayed on the Catalog Search page.

How long does it take for a change to the configuration of my Recommendations activity, offer, promotions, or criteria settings to be reflected on my site?

A change to the promotion settings can take up to five hours to be reflected onsite.

A change to other criteria settings might not be reflected until the next algorithm run:

Some criteria settings (for example, "addition of a dynamic inclusion rule") are reflected instantly.

Other criteria settings (for example "removal of a dynamic inclusion rule", change of lookback window, and so forth) can't be incorporated until the next algorithm run.

Algorithm runs are triggered by these changes but can take up to 24 hours to be completed. Algorithms also run on a scheduled basis every 12-24 hours.

How long does it take for a user's behavior (for example, clicking product A and buying product B) to be reflected in the recommendations that user receives?

Currently viewed/purchased product/content influence the recommendations the user receives on the same pageview/Target content request.

Historical user behavior, such as "last viewed product," "most viewed product," and overall viewing/purchasing history is updated with that request and influence the recommendations that user receives on the next pageview/Target content request. For example, "Recently Viewed Items" and "Recommended For You" algorithms update with each product view/purchase and are reflected on the subsequent content request.

How long does it take for a user's behavior (for example, clicking product A and buying product B) to be reflected in the recommendations other users receive?

The behavior of users in aggregate is incorporated into offline algorithm processing with every algorithm run occurring every 12-24 hours.

What should I do if special characters are breaking my array?

Use escaped values in JavaScript. Quotation marks (") can break the array. The following code snippet is an example of escaped values:

```
#set($String='')
#set($escaper=$String.class.forName('org.apache.commons.lang.StringEscapeUtils'))
<script type="text/javascript">
console.log("$escaper.escapeJavaScript($entity1.name)")
```

console.log("$escaper.escapeJavaScript($entity2.name)")

console.log('$escaper.escapeJavaScript($entity3.name)')

names.push("$escaper.escapeJavaScript($entity4.name)")

</script>

Why aren't all criteria, including custom criteria, available for selection when creating a Recommendations activity?

The available criteria is based on the current category. When you are creating recommendations offers, the algorithm picker displays criteria based on category Id.

If the location on which you're applying this criteria doesn't contain the category Id, certain criteria is not available in the algorithm picker.

If you use a location where category Id is present in the mbox, the criteria picker contains all applicable criteria.

Target has a Filter Incompatible Criteria setting to control intelligent filtering of the algorithm picker.

NOTE

This setting applies to activities created in the Visual Experience Composer (VEC) only. This setting does not apply to activities created in the Form-Based Experience Composer (Target does not have location context).

To access the Filter Incompatible Criteria setting, click Recommendations > Settings:

recs_settings_filter image

If the Filter Incompatible Criteria setting is NOT enabled, Target does not filter algorithms in the Algorithm Picker and all algorithms are displayed.

If the Filter Incompatible Criteria setting is enabled, in VEC activities, Target reads entityId and category Id from the selected location and then displays algorithms based on currentItem|currentCategory (if respective values are present on that location). As a result, only compatible algorithms for the selected location are shown in the algorithm picker, by default.

If the Filter Incompatible Criteria setting is enabled, you can still view non-compatible algorithms by deselecting the Compatible checkbox while selecting criteria.

compatible_checkbox image

The following list contains special cases in which Target does not display the Compatible checkbox:

Both entityId and category Id are present on the location, then nothing is being filtered.

You are using mbox.js version 55 or earlier.

No mbox call is being fired from the page (!config.isAutoCreateGlobalMbox && !config.isRegionalMbox)

Target parameters are not defined.

What should I do if a collection in Recommendations goes to zero (0)?

Consider the following information if you see a collection go to zero that previously was not at zero:

You can resave the collection and see if it updates the number. By resaving, the collection reruns all algorithms that are using that collection.

Are you looking at the right environment? Go to /target/products.html#recsSettings to double check (as shown below).

product_catalog image

Is your index up to date? Go t o /target/products.html#productSearch and check how many hours old the index is (for example, "Indexed 3 hours ago"). You can refresh the index as needed.

Did you change something in the feed or the data layer that resulted in your entities no longer matching the collection rules? Make sure your CASE matches (case-sensitive).

Did your feed run successfully? Did someone change the FTP directory, password, and so forth?

Target does its best to make updates to the delivery (on the customer's page/app) happen as quickly as possible. Yet, Target also has to provide some representation in the UI for the marketer. Target

does not delay delivery updates to wait for the UI updates to be in sync. You can use mboxTrace to see what is in the system at the time a request comes in.

What's the difference between general Attribute Weighting and Content Similarity-specific attribute weighting?

Attribute weighting exists in two forms: "standard attribute weighting" and "content similarity attribute weighting."

"Standard attribute weighting" applies to most, if not all, criteria types (not just Content Similarity). This type of weighting gives more weight to certain attribute values. In the following example, Nike products get a bump in the output recommendations.

attribute_weighting_example image

"Content similarity attribute weighting" applies to Content Similarity criteria only.

This type of weighting is more dynamic, and is based on the current "recommendation key" (the currently viewed item). In the following example (brand x 16), if a visitor were viewing Nike sneakers, that visitor is more likely to be recommended other Nike products (not necessarily only sneakers) rather than competitors' sneakers. If a visitor is viewing Adidas sneakers, that visitor is more likely to be recommended Adidas products.

content_similarity_example image

Why is Target sometimes unable to show recommendations?

Target sometimes cannot show recommendations due to the low number of available recommendations.

The number of values generated per criteria is three times the number of entities specified in the design. Runtime filtering (for example, inventory, mbox attribute matching) is applied after the 3x values are generated, so it is possible end up with fewer than 3x values at delivery time. To mitigate this situation, increase the number of entities in the design by hiding other entities.

The following JavaScript can be used at the beginning of the design to increase the number of requested entities. In this example, the requested entity count would be 30 (3x10).

```
#foreach($entity in $entities)

 #if( $foreach.count > 10 )

  #break

 #end

 #set ($foo = $entity.id)

#end
```

What is the size limit of an API call for insert/update products? Can I update 50,000 products in one call using the API instead of a feed?

Target imposes a 50-MB post limit at the application level; however, that is only when you pass the application/x-www-form-urlencoded content type header.

You could certainly try to send 50,000 products in a single call. If it fails, you can break it up into batches. Adobe recommends that customers break their calls into 5,000 or 10,000 product batches to decrease the likelihood of a timeout due to system load.

Must I specify the mbox name when creating Recommendations criteria, promotions, or template testing rules?

When creating a Recommendations criteria, promotions, or template testing rule based on an mbox parameter, mboxParameter no longer prompts you for mboxName. mbox name is now optional. This change lets you use parameters from multiple mboxes or reference a parameter that has not yet been recorded on the edge.

To select the desired parameter:

While creating a criteria, promotion, or template testing rule, select a parameter name from the list. Start typing the first characters of the desired parameter name, or type the full name of the desired parameter name.

If you remember the mbox name, but not the parameter name, use the checkbox to filter on a known mbox passing the desired parameter.

Using either method, there is no link between the mbox and the parameter. The criteria, promotion, or template testing rule works based on parameter across all mboxes that pass that parameter.

If you edit an existing criteria, promotion, or template testing rule, the filtering criteria displays with the mbox name that was supplied during creation.

Why can't I save my legacy Recommendations activity after defining a new audience?

Ensure that the audience has a unique name. If you gave the audience the same name as an existing audience, you cannot save your legacy Recommendations activity (a Recommendations activity created before October 2016).

What is the maximum size of a CSV file for a feed upload?

There is no hard limit on the number of rows or file size for a feed's CSV file upload. However, as a best practice, Adobe recommends limiting the CSV file size to 1 GB to avoid failures during the file upload process. If the size of the file exceeds 1 GB, it can ideally be split into multiple feed files. The maximum number of custom attribute columns is 100 and custom attributes are limited to 4096 characters. Other limits on the length of required columns are available on the Target Limitations page.

Can I dynamically exclude an entity?

In the query string, you can pass entity IDs for entities that you want to exclude from your recommendations. For example, you can exclude items that are already in the shopping cart.

To enable the exclusion functionality, use the excludedIds mbox parameter. This parameter points to a list of comma-separated entity IDs. For example, mboxCreate(..., "excludedIds=1,2,3,4,5"). The value is sent when requesting recommendations.

The exclusion is performed for the current Target call only; items are not excluded on subsequent Target calls unless the excludedIds value is passed again. To exclude items in the cart from recommendations on every page, continue to pass the excludedIds value on every page.

NOTE

If too many entities are excluded, recommendations behave as if there aren't enough entities to fill the recommendation template.

To exclude entityIds, append the &excludes=${mbox.excludedIds} token to the offer content url. When the content url is extracted, the required parameters are substituted using current mbox request parameters.

By default, this feature is enabled for newly created recommendations. Existing recommendations must be saved to support Dynamically Excluded entities.

What does the NO_CONTENT response sometimes returned in the Recommendations content trace mean?

NO_CONTENT is returned when recommendations are unavailable for the requested algorithm and key combination. Generally speaking, this situation occurs when backups are disabled for the algorithm and one or more of the following is also true:

Results are not yet ready.

This situation typically occurs when first saving a newly created activity or after configuration changes are made to the collection, criteria, or promotions used in the activity.

Results are ready, but not yet cached at the nearest edge server, for the requested algorithm/key combination.

The request initiates a caching operation, so this issue should resolve itself after a few page reloads and/or a few minutes pass.

Results are ready, but not available for the provided key value.

This situation typically occurs when requesting recommendations for an item that was added to the catalog after the most recent algorithm run and will resolve itself after the next algorithm run.

Partial template rendering is disabled and not enough results are available to fill the template.

This situation typically occurs when you have a dynamic inclusion rule, which aggressively filters many items from the possible results. To avoid situation, enable backups and do not apply the inclusion rule to backups, or use the criteria in sequence with a less-aggressively filtered criteria.

Do recommendations based on recently viewed items persist across multiple devices for a single visitor?

When a visitor initiates a session, the session ID is tied to a single edge machine and a temporary profile cache is stored on this edge machine. Subsequent requests from the same session read this profile cache, including recently viewed items.

When the session ends (generally, when it expires after 30 minutes of no activity), the session state, including recently viewed items, is then persisted to a more permanent profile storage in the same geographic edge.

Subsequent sessions from different devices are then able to access these recently viewed items as long as the new session is linked to the customer profile via the same Marketing Cloud ID (MCID), Experience Cloud ID (ECID), or CustomerID/mbox3rdPartyId.

If a visitor has two active sessions at the same time, recently viewed items on one device do not update the recently viewed items on the other device, unless the devices are forced to share the session ID. There is a potential workaround for the issue, but Target does not directly support sharing a session ID across multiple devices. The customer must manage this ID sharing themselves.

This behavior still occurs if a visitor is active on one device and then becomes active on the other device a few minutes later. The first device's session does not expire for 30 minutes and there can be up to five minutes of delay before the profile state is written to the permanent state and processed. Allow 35 minutes for the session to expire and the profile to be stored when testing this behavior.

If the visitor does not have two active sessions at the same time, recently viewed items on one device update the recently viewed items on the other device as long as the session has ended. Allow 35 minutes for the session to expire when testing this behavior.

Can I use an algorithm created in Adobe Recommendations Classic in Recommendations Premium?

An algorithm created in Recommendations Classic is not supported in Recommendations Premium. You might be able to use the legacy algorithm in Target Premium; however, the algorithm can create sync issues when deactivating or deleting the activity in the Target Premium UI. For more information about the differences between the two solutions, see Recommendations Classic versus Recommendations activities in Target Premium.

How can I recommend only new articles or videos?

Some customers in media and publishing want to ensure that recommended items include only the newest articles or videos. As an example, a Target customer used the following approach to recommend articles fewer than 60 days old:

Pass the article publish date, in YYMMDDD format, as a custom entity attribute.

Create a profile script that is today's date minus 60 days, also in YYYYMMDD format.

Use a dynamic inclusion filter in the criteria so that publish date > today's date minus 60 days.

Pass the publish date as a custom entity attribute:

Entity attribute	Example
issueDate	2021218
lastViewDate	2021701

parentCategory commentary

publishDate   20210113

publishDateDisplay   Jan 13, 2021

Configure the profile script:

Sample profile script

Configure the inclusion rule:

Sample inclusion rule

NOTE

This example could also be accomplished using parameter matching and passing the priorDate60 value as an mbox parameter.

What are some known issues when using Recommendations activities?

The following are known issues with Recommendations activities:

When Target returns a JSON offer with getOffer(), it returns with type of JSON. However, if you return a JSON Recommendations design it returns with a type of HTML.

Expired entities are correctly expired after 60 days of receiving no updates via feed or API; however, the expired entities are not removed from the Catalog Search index after expiration. Entities deleted via feed or API are also not currently removed from the Catalog Search index. (IRI-857)

Recommendations Offers in A/B and Experience Targeting activities do not show a visual preview of the Recommendations tray (TGT-33426)

Collections, exclusions, criteria, and designs created via API are not visible in the Target user interface and can be edited only via API. Likewise, if you create any of these items in the Target UI and later edit them via API, those changes are not reflected in the Target UI. Items edited via API should continue to be edited via API to avoid loss of any modifications. (TGT-35777)

Recommendations activities created via API can be viewed in the user interface, but can only be edited via API.

The Custom Criteria feed status displayed in the Criteria list (card) view is refreshed every ten minutes and might be more than ten minutes out of date in rare circumstances. The status displayed in the Custom Criteria edit view is fetched in real time and is always up to date. (TGT-35896, TGT-36173)

Feeds

Use feeds to get entities imported into Adobe Target Recommendations. Entities can be sent using CSV files, the Google Product Search feed format, and Adobe Analytics product classifications.

Feeds Overview

Feeds allow you to pass Entities or augment your mbox data with information that is either unavailable on the page or is unsafe to send directly from the page, such as margin, COGS, and so on.

Feeds let you pass detailed item information into Recommendations, such as product ID, category, name, message, and other attributes.

You can select which columns from your Target product classifications file or Google Product Search file you want to send to the Recommendations server.

These pieces of data about each item can then be used to:

- Display values in designs

- Define criteria inclusion rules

- Sort items into different collections

- Apply exclusions to recommendations

Item descriptions can be passed into Target using feeds or mboxes. If data is collected by both an entity feed and an mbox, the most recent data wins. Usually, the most recent data comes from an mbox, because it is viewed more often. In the rare event that entity feed data and mbox data hit at the same time, the mbox data is used.

The Feeds list (**Recommendations** > **Feeds**) provides information about any feeds you have created.

The Feeds page contains the following columns:

- **Name**: The name of the feed specified during creation. To edit the name of a feed, you must edit the feed itself. When you save with the new name, the feed is refreshed.

- **Type**: Types include CSV, Google Product Feed, and Analytics Classifications.

- **Status**: The feed's current [status](#).

- **Schedule**: Displays the update schedule for the feed: Daily, Weekly, Every 2 Weeks, or Never.

- **Items**: Displays the number of items in the feed.

- **Last Updated**: Displays the date and time when the feed was last updated and the name of the person who updated the feed. If the Last Updated feed says "undefined," the feed is coming in from Recommendations Classic and cannot be changed from within Target Premium Recommendations.

IMPORTANT

Uploaded entities and entity attributes expire after 61 days. This means:

- Your feed should run at least monthly to ensure that your catalog contents do not expire.

- Removing an item from your feed file does not remove that item from your catalog. To remove the item from the catalog, manually delete the item via the Target UI or API. Or, modify the item attributes (such as inventory) to ensure that the item is excluded from consideration.

Source types

Entities can be sent using CSV files, the Google Product Search feed format, and Adobe Analytics product classifications.

CSV

You can create a .csv file using the Adobe proprietary CSV upload format. The file contains display information about the reserved and custom attributes for your products. To upload attributes specific to your implementation, replace CustomN in the header row with the name of the attribute you want to use. In the example below, entity.Custom1 has been replaced by: entity.availability. You can then bulk upload the file to the Recommendations server.

Using the .csv format has the following advantages over the Google Feed format:

- It doesn't require field mappings.

- It supports multi-value attributes (see example below).

- It supports up to 100 custom attributes. If you need more than 100 custom attributes, you can create a second feed file with a different set of custom attributes specified.

Use the bulk upload method to send display information if you don't have mboxes on your page, or you want to supplement your display information with items that are not available on your site. For example, you might want to send inventory information that might not be published on your site.

Any data uploaded using the .csv file, Google product feed, or Analytics Product classification feed overwrites the existing entity attribute value in our database. If you send price information via mbox requests and then send different price values in the file, the values in the file overwrite the values set with the mbox request. An exception to this is the categoryId entity attribute where the category values are appended instead of being overwritten up to the 250-character limit.

IMPORTANT

Do not enclose values in double quotes (") in your .csv file unless they are intentional. If you enclose values in double quotes you must escape them by enclosing them in another set of double quotes. Double quotes that are not escaped prevent the recommendations feed from loading properly.

For example, the following syntax is incorrect:

"Apples "Bananas" Grapes"",

Copy

Toggle Text Wrapping

The following syntax is correct:

"Apples ""Bananas"" Grapes""",

Copy

Toggle Text Wrapping

NOTE

You can't overwrite an existing value with a blank value. You must pass another value in its place to overwrite it. In the case of sale price, a common solution is to either pass in an actual "NULL" or some other message. You can then write a template rule to exclude items with that value.

The product is available in the admin interface approximately two hours after successfully uploading its entity.

The following is sample code for a .csv file:

RECSRecommendations Upload File

RECS"## RECS" indicates a Recommendations pre-process header. Please do not remove these lines.

RECS

RECSUse this file to upload product display information to Recommendations. Each product has its own row. Each line must contain 19 values and if not all are filled a space should be left.

RECSThe last 100 columns (entity.custom1 - entity.custom100) are custom. The name 'customN' can be replaced with a custom name such as 'onSale' or 'brand'.

RECSIf the products already exist in Recommendations then changes uploaded here will override the data in Recommendations. Any new attributes entered here will be added to the product''s entry in Recommendations.

RECSentity.id,entity.name,entity.categoryId,entity.message,entity.thumbnailUrl,entity.value,entity.pageUrl,entity.inventory,entity.margin,entity.last_updated_by,entity.multi_english,entity.availability,entity.tax_country,entity.tax_region,entity.tax_rate,entity.product_type,entity.item_group_id,entity.color,entity.size,entity.brand,entity.gtin

na3456,RipCurl Watch with Titanium Dial,Watches & Sport,Cutting edge titanium with round case,https://example.com/s7/na3456_Viewer,425,https://example.com/shop/en-

us/na3456_RipCurl,24,0.25,csv,"[""New"",""Web"",""Sales"",""[1,2,34,5]""]",in stock,US,CA,9.25,Shop by Category > Watches,dz1,Titanium,44mm,RipCurl,"075380 01050 5"

na3457,RipCurl Watch with Black Dial,Watches & Sport,Cutting edge matte black with round case,https://example.com/s7/na3457_Viewer,275,https://example.com/shop/en-us/na3457_RipCurl,24,0.27,csv,"[""New"",""Web"",""Sales"",""[1,2,34,5]""]",in stock,US,CA,9.25,Shop by Category > Watches,dz1,Black,44mm,RipCurl,"075340 01060 7"

Copy

Toggle Text Wrapping

Google

The Google Product Search feed type uses the Google format. This is different from the Adobe proprietary CSV upload format.

If you have an existing Google product feed, you can use that as your import file.

NOTE

It is not required to use Google data. Recommendations just uses the same format as Google. You can use this method to upload any data you have, and use the available scheduling features. However, you must retain Google's predefined attribute names when you set up the file.

Most retailers upload products to Google, so when a visitor uses Google product search, their products will show up. Recommendations follows Google's specification exactly for entity feeds. Entity feeds can be sent to Recommendations via .xml, .txt, or .tsv, and can use the attributes defined by Google. The results are searchable on the Google shopping pages.

NOTE

The POST method must be allowed on the server that is hosting the Google feed content.

Because Recommendations users already configure .xml or .txt feeds to send to Google either via URL or FTP, entity feeds accept that product data and use it to build out the recommendations catalog. Specify where that feed exists and the recommendations server retrieves the data.

If you use Google Product Search for the entity feed upload, you still need to have a product page mbox on the page if you want to show recommendations there or track product views for algorithm delivery based on views.

Google feeds do not support multiple values for a custom attribute.

The feed runs at the time you save and activate it. It runs at the time you save the feed, then every day an hour later.

The following is sample code for a Google Product Search feed .xml file:

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>

<feed xmlns="https://www.w3.org/2005/Atom" xmlns:ns2="https://base.google.com/ns/1.0" xmlns:ns3="https://base.google.com/cns/1.0">

  <title>Product Feed</title>

  <link href="https://example.com"/>

```xml
<updated>2017-12-13T08:45:04.918-08:00</updated>
<author>
  <name>Product Feed Author</name>
</author>
<id>https://example.com</id>
<entry>
  <title>RipCurl Watch with Titanium Dial</title>
  <description>Cutting edge Titanium with Round case</description>
  <ns2:id>na3452</ns2:id>
  <ns2:link>https://example.com/shop/en-us/na3452_RipCurl</ns2:link>
  <ns2:availability>in stock</ns2:availability>
  <ns2:condition>NEW</ns2:condition>
  <ns2:google_product_category>Watches &amp; Sport</ns2:google_product_category>
  <ns2:gtin>075380 01050 5</ns2:gtin>
  <ns2:image_link>https://example.com/s7/na3452_Viewer</ns2:image_link>
  <ns2:mobile_link>https://m.example.com/s7/na3452_Viewer</ns2:mobile_link>
  <ns2:mpn>71050</ns2:mpn>
  <ns2:price>425</ns2:price>
  <ns2:product_review_average>5.0</ns2:product_review_average>
  <ns2:product_review_count>30</ns2:product_review_count>
  <ns2:product_type>Shop by Category > Watches </ns2:product_type>
  <ns2:brand>RipCurl</ns2:brand>
  <ns2:sale_price>375</ns2:sale_price>
  <ns2:tax>
    <ns2:country>US</ns2:country>
    <ns2:region>CA</ns2:region>
    <ns2:rate>9.25</ns2:rate>
    <ns2:tax_ship>y</ns2:tax_ship>
  </ns2:tax>
  <ns2:is_bundle>N</ns2:is_bundle>
</entry>
```

```xml
    <entry>

      <title>RipCurl Watch with Black Dial</title>

      <description>Cutting edge matte black with Round case</description>

      <ns2:id>na3453</ns2:id>

      <ns2:link>https://example.com/shop/en-us/na3453_RipCurl</ns2:link>

      <ns2:availability>in stock</ns2:availability>

      <ns2:condition>NEW</ns2:condition>

      <ns2:google_product_category>Watches &amp; Sport</ns2:google_product_category>

      <ns2:gtin>075380 013450 5</ns2:gtin>

      <ns2:image_link>https://example.com/s7/na3453_Viewer</ns2:image_link>

      <ns2:mobile_link>https://m.example.com/s7/na3453_Viewer</ns2:mobile_link>

      <ns2:mpn>71050</ns2:mpn>

      <ns2:price>275</ns2:price>

      <ns2:product_review_average>4.8</ns2:product_review_average>

      <ns2:product_review_count>23</ns2:product_review_count>

      <ns2:product_type>Shop by Category > Watches </ns2:product_type>

      <ns2:brand>RipCurl</ns2:brand>

      <ns2:sale_price>249</ns2:sale_price>

      <ns2:tax>

        <ns2:country>US</ns2:country>

        <ns2:region>CA</ns2:region>

        <ns2:rate>9.25</ns2:rate>

        <ns2:tax_ship>y</ns2:tax_ship>

      </ns2:tax>

      <ns2:is_bundle>N</ns2:is_bundle>

    </entry>

</feed>
```

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The following is sample code for a Google Product Search feed .tsv file:

```
id  title  description  link  price  condition  availability  image_link  tax  shipping_weight
shipping  google_product_category  product_type  item_group_id  color  size  gender
age_group  pattern  brand  gtin  mpn

na3454    RipCurl Watch with Titanium Dial    Cutting edge titanium with round case
https://example.com/shop/en-us/na3454_RipCurl    425    new    in stock
https://example.com/s7/na3452_Viewer    US:CA:9.25:y    1.5 oz    US:::0.00 USD    Watches & Sport
Shop by Category > Watches    dz1    Black    44mm    male    adult    Solid    RipCurl    075380 01050 5
DZ1437

na3455    RipCurl Watch with Black Dial    Cutting edge matte black with round case
https://example.com/shop/en-us/na3455_RipCurl    275    new    in stock
https://example.com/s7/na3452_Viewer    US:CA:9.25:y    1.5 oz    US:::0.00 USD    Watches & Sport
Shop by Category > Watches    dz1    Black    44mm    male    adult    Solid    RipCurl    075340 01060 7
DZ1446
```

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Analytics Product Classifications

The Analytics Product classification is the only classification available for recommendations. For more information about this classification file, see About classifications in the *Analytics Components* guide. It's possible that not all the information you need for recommendations will be available in your current implementation, so follow this user guide if you want to add to your classifications file.

IMPORTANT

Before importing entity data into Recommendations using Analytics product classifications, be aware that this is not the preferred method.

Be aware of the following caveats:

- Updates to entity attributes incur an additional delay of up to 24 hours.

- Target supports Product Classifications only. The Analytics product SKU must map to the same level as the Recommendations entity.id. Custom Analytics Classifications can be engineered using Adobe Consulting Services. Please contact your Account Manager with questions.

Create Feed

Create a feed to insert information about your products or services into Recommendations.

1. From within the Target interface, click **Recommendations** > **Feeds** > **Create Feed**.

2. Specify a descriptive name for your feed.

3. Select a **Source Type**.

   - CSV

   - Google Product Feed

   - Analytics Classifications

For information about the CSV and Google Product Feed feed types, see <u>Feeds Overview</u>. You can also <u>download a model CSV guide</u> to help you format the feed correctly.

4. (Conditional) If you selected **CSV** or **Google Product Feed**, specify the location where the feed can be accessed.

   - **FTP**: If you selected FTP, provide the FTP server information, the login credentials, the filename, and the FTP directory. You have the option to use FTP with SSL (FTPS) for more secure uploads.

Supported FTP server settings:

   - FTP and FTPS must be set to use Passive FTP.

   - For FTPS, configure server to accept Explicit FTPS connections.

   - SFTP is not supported.

   - You can manually specify a port on which to initiate the connection (e.g. ftp://ftp.yoursite.com:2121). If you do not specify a port, the default FTP or FTPS port is used.

   - **URL**: If you select URL, specify the URL.

5. (Conditional) If you selected **Analytics Classifications**, choose the report suite from the drop-down list.

6. Click the **Next** arrow to display the Schedule options.

7. Select an update option:

   - Daily

   - Weekly

   - Every 2 Weeks

   - Never: Do not schedule an update. Choose this if you do not want this feed to run.

8. Specify the time you want your feed to run.

This option is based on the time zone used in your browser. If you want to use a time in a different time zone, you must calculate that time according to your time zone.

9. Click the **Next** arrow to display the Mapping options, then specify how you want to map your data to Target definitions.

10. (Optional) If you want the feed to belong to an environment (host group), select the host group.

By default the feed belongs to all host groups. This ensures that items in this feed are available in any environment. For more information, see Hosts.

11. Click **Save**.

After you create or edit a feed, the feed runs immediately, then will update according to the parameters you set. It takes some time for all the information to be available. First, the feed must sync, then it must be processed and indexed before it can be published and made available. The current status appears under Feed Status in the Feeds list. You can close Target before the process is complete and the process continues.

While indexing is in progress, products and feed headers appear before individual values have been indexed. This enables you to search and see products so you can create collections, exclusions, designs, and activities before indexing has been completed.

When the Status says "Success," it means that the file was found and it parsed correctly. The information is not available to use within Recommendations until the file is indexed, which can take some time, depending on the size of your file. If the process fails, it means that the file was not found (for example, you used an incorrect URL or your FTP information was incorrect), or that there was a parsing error.

Feed Statuses and Indicators

Information about the possible feed statuses and their indicators.

Feed Statuses

The following are possible statuses for a feed:

Status	Description
Syncing	Feed setup details are being saved to Target.
Sync Failed	Feed setup details could not be saved to Target. Please try again.
No Feed Run	You have created a feed but it has not been scheduled (frequency is set to Never).
Scheduled at *date and time*	The feed has not been run, but is scheduled to run at the specified date and time.
Waiting for Download	Target is preparing to download the Feed file.
Downloading Feed File	Target is downloading the Feed file.
Importing Items	Target is importing items from the feed file.
Feed Imported Successfully at *time*	Target has imported the feed file into its content delivery system. Changes to item attributes have been made in the content delivery system and will shortly be reflected in delivered recommendations. If you do not see the expected changes, try again shortly and refresh the page containing recommendations. Notes: - If changes to an item's attributes result in an item being excluded from recommendations, the exclusion will be immediately reflected. If an item is newly added, or changes to attributes result in an item being *no longer* excluded from recommendations, it will not be reflected until the next algorithm update, which will occur within 24 hours. - When this status is displayed, updates may not yet be reflected in the Catalog Search user interface. A separate status is listed on Catalog Search indicating the last time the searchable catalog was updated.
Failed to Index	The index operation failed. Please try again.

Status	Description
Server Not Found	FTP or URL locations are invalid or otherwise unreachable.

To update a feed (for example, to make changes to your feed configuration or feed file), open the feed, make any desired changes, and click **Save**.

Understanding feeds in Recommendations (3:01)
Create a feed (6:44)

Customize a design using Velocity

Use the open-source Velocity design language to customize recommendation designs in Adobe Target Recommendations.

Velocity overview

Information about Velocity can be found at https://velocity.apache.org.

All Velocity logic, syntax, and so on can be used for a recommendation design. This means that you can create *for* loops, *if* statements, and other code using Velocity rather than JavaScript.

Entity attributes sent to Recommendations in the productPage mbox or the CSV upload can be displayed in a design, with the exception of "multi-value" attributes. Any type of attribute can be sent; however, Target does not pass attributes of type "multi-value" as an array over which a template can iterate (for example entityN.categoriesList).

These values are referenced with the following syntax:

$entityN.variable

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Entity attribute names must follow Velocity shorthand notation, which consists of a leading $ character, followed by a Velocity Template Language (VTL) Identifier. The VTL Identifier must start with an alphabetic character (a-z or A-Z).

Velocity entity attribute names are restricted to the following types of characters:

- Alphabetic (a-z, A-Z)

- Numeric (0-9)

- Hyphen (-)

- Underscore (_)

The following attributes are available as Velocity arrays. As such, they can be iterated over or referenced via index.

- entities

- entityN.categoriesList

For example:

#foreach ($category in $entity1.categoriesList)

$category

#end

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Or

#if ($entities[0].categoriesList.size() >= 3)

$entities[0].categoriesList[2]

#end

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For more information about Velocity variables (attributes), see https://velocity.apache.org/engine/releases/velocity-1.7/user-guide.html#variables.

If you use a profile script in your design, the $ preceding the script name must be escaped with a \ (backslash). For example:

\${user.script_name}

NOTE

The maximum number of entities that can be referenced in a design, either hard-coded or via loops, is 99. The template script length can contain up to 65,000 characters.

For example, if you want a design that displays something similar to this:
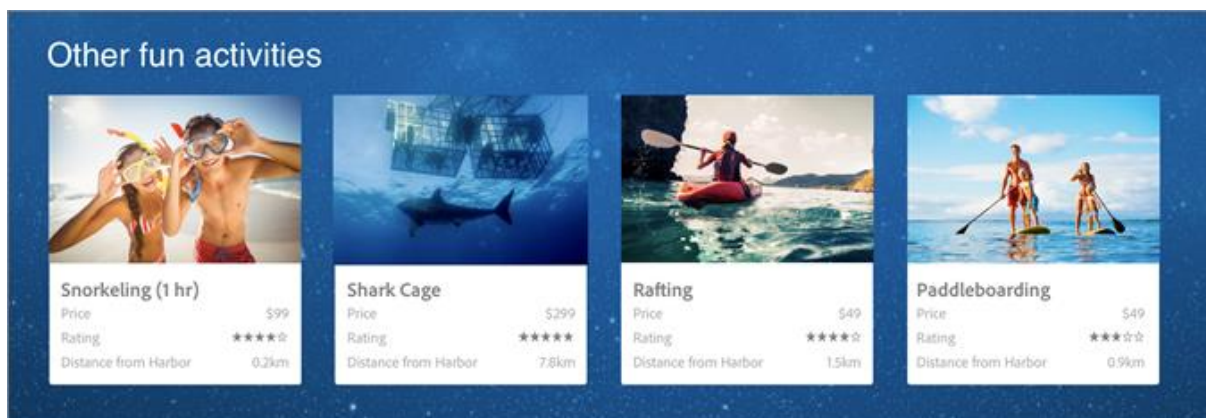
you can use the following code:

<table style="border:1px solid #CCCCCC;">

```html
<tr>

<td colspan="3" style="font-size: 130%; border-bottom:1px solid

#CCCCCC;"> You May Also Like... </td>

</tr>

<tr>

<td style="border-right:1px solid #CCCCCC;">

<div class="search_content_inner" style="border-bottom:0px;">

<div class="search_title"><a href="$entity1.pageUrl"

style="color: rgb(112, 161, 0); font-weight: bold;">

$entity1.id</a></div>

By $entity1.message <a href="?x14=brand;q14=$entity1.message">

(More)</a><br/>

sku: $entity1.prodId<br/> Price: $$entity1.value

<br/><br/>

</div>

</td>

<td style="border-right:1px solid #CCCCCC; padding-left:10px;">

<div class="search_content_inner" style="border-bottom:0px;">

<div class="search_title"><a href="$entity2.pageUrl"

style="color: rgb(112, 161, 0); font-weight: bold;">

$entity2.id</a></div>

By $entity2.message <a href="?x14=brand;q14=$entity2.message">

(More)</a><br/>

sku: $entity2.prodId<br/>

Price: $$entity2.value

<br/><br/>

</div>

</td>

<td style="padding-left:10px;">

<div class="search_content_inner" style="border-bottom:0px;">

<div class="search_title"><a href="$entity3.pageUrl"
```

style="color: rgb(112, 161, 0); font-weight: bold;">

$entity3.id</div>

By $entity3.message

(More)

sku: $entity3.prodId
 Price: $$entity3.value

</div>

</td>

</tr>

</table>

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NOTE

If you want to add text after the value of an attribute before a tag that indicates the attribute name has finished, you can do so using formal notation to enclose the name of the attribute. For example: ${entity1.thumbnailUrl}.gif.

You can also use algorithm.name and algorithm.dayCount as entity attributes in designs, so one design can be used to test multiple criteria, and the criteria name can be dynamically displayed in the design. This shows the visitor that he or she is looking at "top sellers" or "people who viewed this bought that." You can even use these attributes to display the dayCount (number of days of data used in the criteria, like "top sellers over the last 2 days," etc.

Working with numbers in Velocity templates

By default, Velocity templates treat all entity attributes as string values. You might want to treat an entity attribute as a numeric value in order to perform a math operation or compare it to another numerical value. To treat an entity attribute as a numeric value, follow these steps:

1. Declare a dummy variable and initialize it to an arbitrary integer or double value.

2. Ensure that the entity attribute you want to use is not blank (required for Target Recommendations' template parser to validate and save the template).

3. Pass the entity attribute into the parseInt or parseDouble method on the dummy variable you created in step 1 to turn the string into an integer or double value.

4. Perform the math operation or comparison on the new numeric value.

Example: Calculating a discount price

Suppose you want to reduce the displayed price of an item by $0.99 to apply a discount. You could use the following approach to achieve this result:

#set($double = 0.1)

```
#if( $entity1.get('priceBeforeDiscount') != '' )

   #set( $discountedPrice = $double.parseDouble($entity1.get('priceBeforeDiscount')) - 0.99 )

   Item price: $$discountedPrice

#else

   Item price unavailable

#end
```

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Example: Choosing the number of stars to display based on an item's rating

Suppose you want to display an appropriate number of stars based on an item's numerical average customer rating. You could use the following approach to achieve this result:

```
#set( $double = 0.1 )


#if( $entity1.get('rating') != '' )

   #set( $rating = $double.parseDouble($entity1.get('rating')) )

   #if( $rating >= 4.5 )

      <img src="5_stars.jpg">

   #elseif( $rating >= 3.5 )

      <img src="4_stars.jpg">

   #elseif( $rating >= 2.5 )

      <img src="3_stars.jpg">

   #elseif( $rating >= 1.5 )

      <img src="2_stars.jpg">

   #else

      <img src="1_star.jpg">

   #end

#else

   <img src="no_rating_default.jpg">

#end
```

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Example: Calculating the time in hours and minutes based on an item's length in minutes

Suppose you store the length of a movie in minutes, but want to display the length in hours and minutes. You could use the following approach to achieve this result:

```
#if( $entity1.get('length_minutes') )

#set( $Integer = 1 )

#set( $nbr = $Integer.parseInt($entity1.get('length_minutes')) )

#set( $hrs = $nbr / 60)

#set( $mins = $nbr % 60)

#end
```

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Displaying a key item with recommended products

You can modify your design to show your key item alongside other recommended products. For example, you might want to show the current item for reference next to the recommendations.
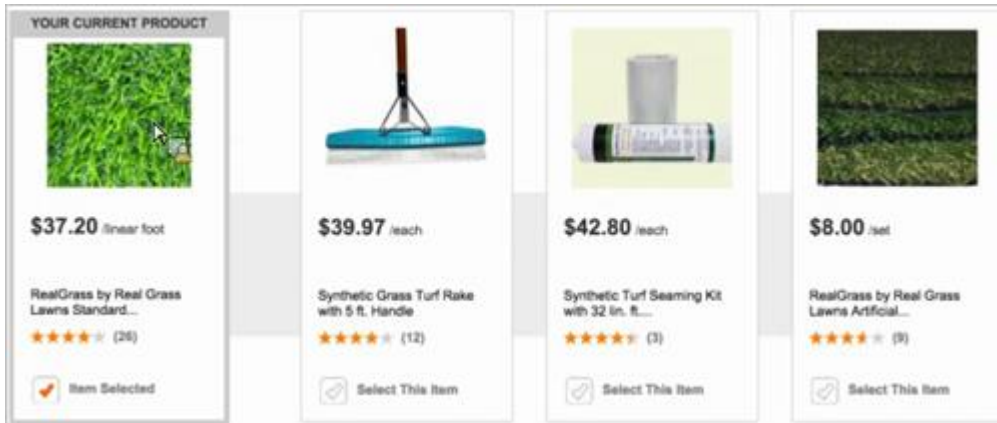
To do this, create a column in your design that uses the $key attribute you are basing your recommendation on rather than the $entity attribute. For example, the code for your key column might look like this:

```
<div class="at-table-column">

  <a href="$key.pageURL">

    <img src=$key.thumbnailUrl" class="at-thumbnail"/>

    <br/><h3>$key.name</h3>

    <br/><p class="at-light">$key.message</p>

    <br/><p class="at-light">$key.value</p>

  </a>

</div>
```

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The result is a design like the following, where one column shows the key item.

When you are creating your Recommendations activity, if the key item is taken from the visitor's profile, such as "last purchased item," Target displays a random product in the Visual Experience Composer (VEC). This is because a profile is not available while you design the activity. When visitors view the page, they will see the expected key item.

Performing replacements in a string value

You can modify your design to replace values within a string. For example, replacing the decimal point delimiter used in the United States with the comma delimiter used in Europe and other countries.

The following code shows a single line in a conditional sale pricing example:

```
<span class="price">$entity1.value.replace(".", ",") &euro;</span><br>
```

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The following code is a complete conditional example of a sale price:

```
<div class="price">

  #if($entity1.hasSalesprice==true)

  <span class="old">Statt <s>$entity1.salesprice.replace(".", ",") &euro;</s></span><br>

  <span style="font-size: 10px; float: left;">jetzt nur</span> $entity1.value.replace(".", ",")
&euro;<br> #else

  <span class="price">$entity1.value.replace(".", ",") &euro;</span><br> #end

  <span style="font-weight:normal; font-size:10px;">

                $entity1.vatclassDisplay

                <br/>

                $entity1.delivery

                <br>

        </span>
```

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Customizing the template size and checking for blank values

Using a Velocity script to control for dynamic sizing of the entity display, the following template accommodates a 1-to-many result to avoid creating empty HTML elements when there aren't enough matching entities returned from Recommendations. This script is best for scenarios when back-up recommendations wouldn't make sense and Partial Template Rendering is enabled.

The following HTML snippet replaces the existing HTML portion in the 4x2 default design (the CSS is not included here, for the sake of brevity):

- If a fifth entity exists, the script inserts a closing div and opens a new row with <div class="at-table-row">.

- With 4x2, the maximum results shown will be eight, but this could be customized for smaller or larger lists by modifying $count <=8.

- Be aware that the logic won't balance the entities on multiple rows. For example, if there are five or six entities to display, it won't dynamically become three on top and two on the bottom (or three on top and three on the bottom). The top row will display four items before starting a second row.

```
<div class="at-table">

  <div class="at-table-row">

    #set($count=1)

    #foreach($e in $entities)

      #if($e.id != "" && $count < $entities.size() && $count <=8)

        #if($count==5)

          </div>

          <div class="at-table-row">

        #end

        <div class="at-table-column">

          <a href="$e.pageUrl"><img src="$e.thumbnailUrl" class="at-thumbnail" />

            <br/>

            <h3>$e.name</h3>

            <br/>

            <p class="at-light">$e.message</p>

            <br/>

            <p class="at-light">$$e.value</p>

          </a>
```

```
        </div>

        #set($count = $count + 1)

      #end

    #end

  </div>

</div>
```