

HOW-TO:

Drive Your Retention Strategy with Compass

Compass scans through your user data and identifies the behaviors that best predict retention. Understanding these behaviors is the key to improving your product & driving sustainable growth.

In this guide, we'll walk through how to use Compass to discover important user behaviors, improve your product, and drive retention.



1. Identify Your Goal

First things first: what question are you trying to answer? You'll need to answer these two questions to get started:

1) What is your goal?

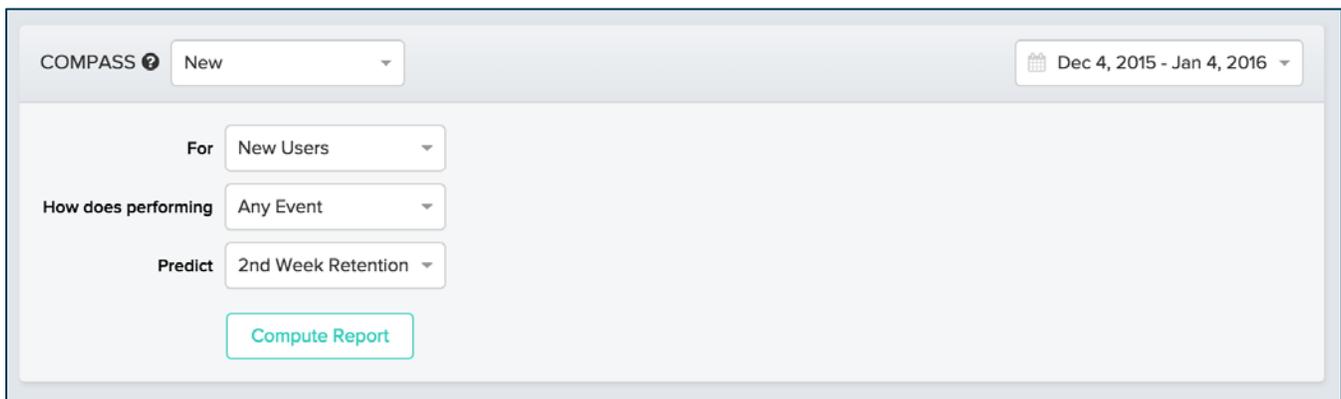
Compass has some default retention goals that you can choose from (ex. 2nd week retention or 6th month retention). Every product is different, so you should define what your retention goal is.

You can also create your own custom goal cohort by defining a behavioral cohort in Amplitude.

2) What user action(s) do you want to investigate?

You can choose a specific event (ex. 'Add friend') in Compass, or you can select 'Any Event' to have Compass scan through all behaviors in a user's first week and identify the best ones.

Here's how you set up your question in Compass:



The screenshot shows the Compass interface for configuring a report. At the top left, it says 'COMPASS' with a help icon and a 'New' dropdown menu. At the top right, there is a date range selector set to 'Dec 4, 2015 - Jan 4, 2016'. Below this, there are three rows of dropdown menus: 'For' set to 'New Users', 'How does performing' set to 'Any Event', and 'Predict' set to '2nd Week Retention'. At the bottom of the form is a green 'Compute Report' button.

'For New Users , how does performing Any Event predict 2nd week retention ?'

'For'

This designates the base cohort of users, in this case New Users. You can customize this base cohort (ex. New Users in California, or New Users on iOS).

'How does performing'

Choose the event you're interested in, or just choose 'Any Event'. In this case, we've selected 'Any Event', so Compass will scan through all behaviors in a user's first week and identify the ones that most strongly predict retention.

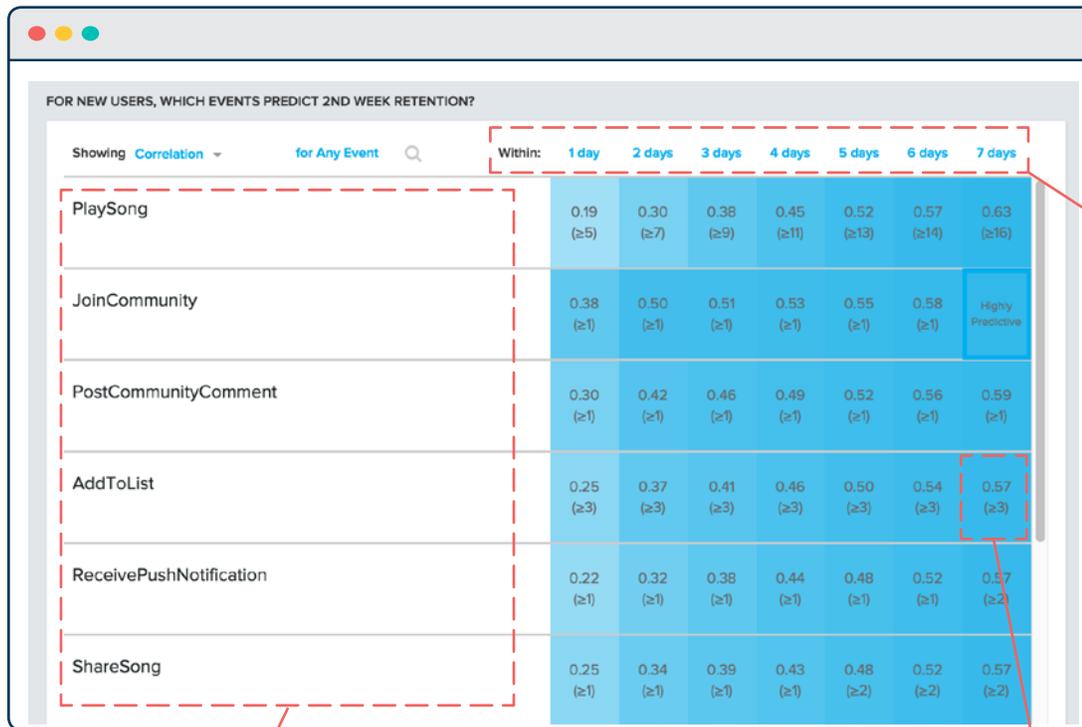
'Predict'

Choose your goal cohort—in this case, 2nd week retention. You can customize this to a different retention timeframe, or to a custom cohort that you define (ex. 2nd week Purchase Completed).

For this guide, let's say you have a music streaming app that lets users play songs and create playlists. In addition, users can join communities based on their musical tastes where they can discuss and share music with others.

2. Run Compass and View Results

Once you compute your Compass query, you get this summarized results view:



Compass scans through the first 7 days for each new user and displays the results for each day in its own column.

Here, you see events ranked by how strongly the behavior predicts 2nd week retention. You can see that performing 'PlaySong', 'JoinCommunity', 'PostCommunityComment', and 'AddToList' are all highly predictive of retention.

Each box shows the results for a particular event in the first n days. Here, you see the results for the event 'PlaySong' within 1 day of first use.

Showing Correlation for Any Event Within: 1 day

PlaySong	0.19 (≥5)
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Threshold is users who do PlaySong at least 5 times

TIP

Why does Compass use correlation as the key metric?

Quick review: Correlation is a measure of how strongly two variables relate to each other, with 1 being the strongest possible positive correlation.

When looking for a good threshold of user activity, you want most users above the threshold to be retained. We also want most users below the threshold to not be retained.

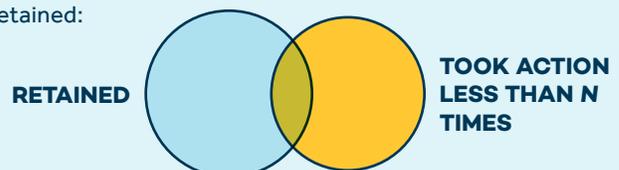
Correlation takes both these considerations into account, and the percentage of your users who actually crossed the threshold.

See [here](#) & [here](#) for more details about the statistics behind Compass.

For a good event and event frequency, we want to find the most overlap between retained users and users who took the action:



We also want most users *below* the threshold to *not* be retained:



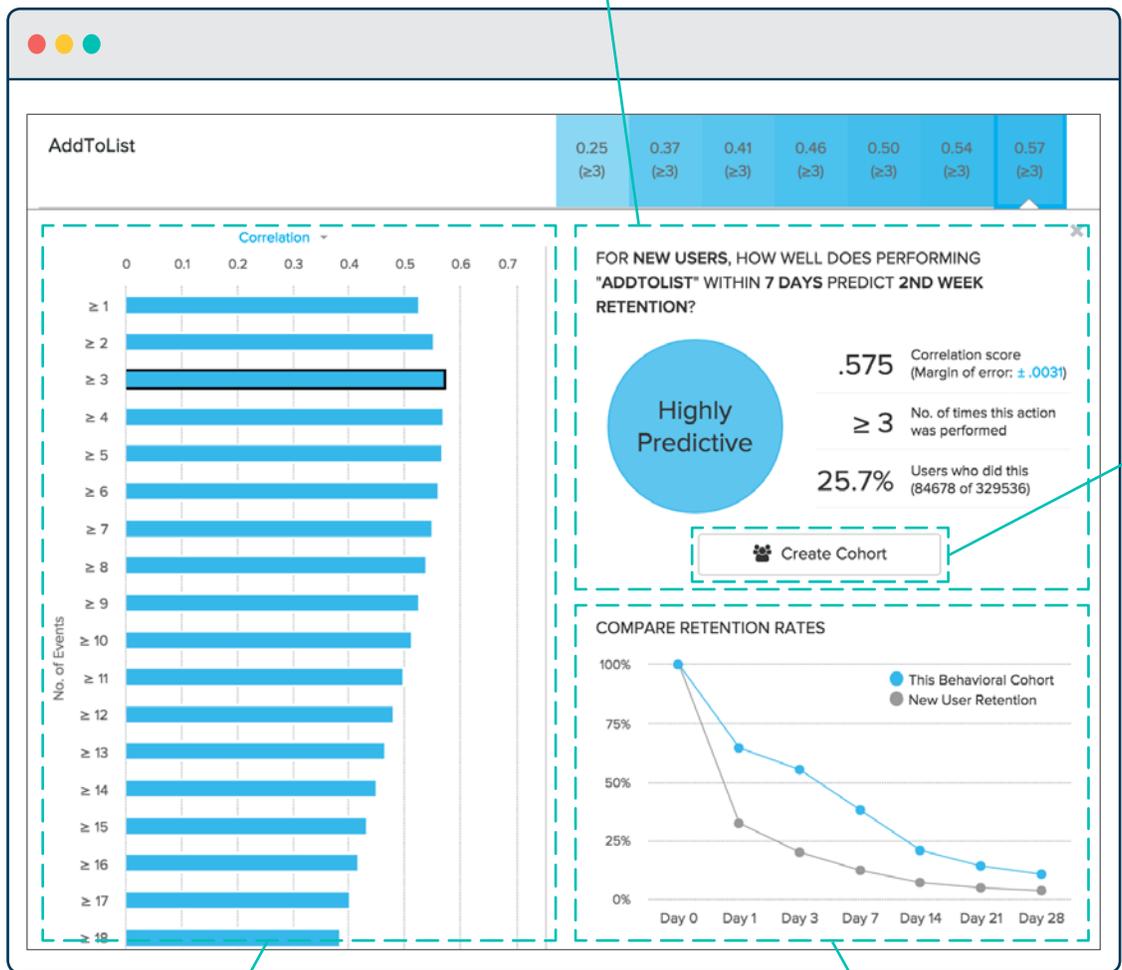
3. Dive Into a Specific Behavior

Let's learn more about the 'AddToList' event, which is tracked anytime a user adds a song to a list:

Compass tells you the strength of the relationship between the action and retention, along with showing you the percentage of users who met this event threshold. In this case, performing 'AddToList' at least 3 times in the first week is highly predictive of 2nd week retention.

Compass has 4 buckets for the strength of the correlation:

Correlation	Highly Predictive	Moderately Predictive	Slightly Predictive	Not Very Predictive
	>0.35	0.25–0.35	0.15–0.25	0.0–0.15



You can create a cohort directly from Compass for further analysis in any other chart or dashboard in Amplitude.

This shows how well a user performing an event at least N times predicts that user being retained. For the 'AddToList' event, performing the event at least three times has the highest correlation with retention.

Visually compare the retention curve of this behavioral cohort (Users who did 'AddToList' at least 3 times within 7 days) to that of overall new user retention.

You can also view a correlation table and more detailed statistics like *Positive Predictive Value*, *Negative Predictive Value*, *Sensitivity*, and *Specificity*. These stats give you additional context so that you can weigh the strength of the correlation and decide how to apply the Compass results to your product.

For more details about the statistics behind Compass, [check out this article](#).

CORRELATION TABLE (Hide) 		
Event Frequency	In Target Cohort	NOT in Target Cohort
≥ 3 Times	48849 (True Positive)	35829 (False Positive)
< 3 Times	14438 (False Negative)	230420 (True Negative)

DETAILED STATISTICS (Hide) 	
Correlation 	0.5745
Positive Predictive Value 	0.5769
Negative Predictive Value 	0.9410
Sensitivity 	0.7719
Specificity 	0.8654
Proportion Above Threshold 	0.2570

4. Form Hypotheses Based on What You've Learned

In the example above, we found that for new users, performing 'AddToList' at least 3 times in their first week is highly predictive of being retained 2 weeks later. This indicates that getting users to add songs to lists early in their experience may be a core part of your app's experience.

The beauty of Compass is that it helps to confirm or disprove assumptions you may have about what users find valuable in your product. Compass can also reveal aspects of your product that you didn't think were very important, but are actually driving value and retention for some of your users.

From these findings, a couple good hypotheses to test are:



Will encouraging new users to add songs to lists during the app's onboarding flow get more of those users to retain 2 weeks later?



If a user hasn't added any songs to lists within their first few days, will sending them a reminder encouraging them to do so, re-engage them, and increase their likelihood of being retained 2 weeks later?

5. Test, Measure, and Repeat!

Of course, correlation is not causation, so hypotheses generated by Compass still need to be tested and verified in the real world.

You can create some variants of the onboarding flow and A/B test them with a fraction of your new users. Once you've run your test, measure your results and see how the new onboarding flow is doing. Are more new users adding songs to lists? Are those users going on to retain at higher levels?

Remember, testing and iteration is a continual process.

There is no single 'a-ha' moment, where once you've figured it out, your app will automatically be a success. Looking back to the Compass results, we see that there are several other user behaviors that have high predictive value of retention that you should also investigate.

You should learn more about how people use these other features, and then think about how you can encourage more users to complete these actions or improve the user experience.

You can always learn more about your users and find new ways to improve your app or website. Compass provides insights that help you build a better product—one that provides value to your users. That's the only guaranteed way to increase your retention and get sustainable growth.

Learn how Compass can accelerate your retention strategy. Email us at contact@amplitude.com.