

TUTORIAL NOTE

Cellular Imaging and Analysis

Volocity Tutorial Performing Simple Measurements in Volocity Software

This tutorial will demonstrate how to perform simple line, point counting and region of interest (ROI) measurements in Volocity® Quantitation.

Data

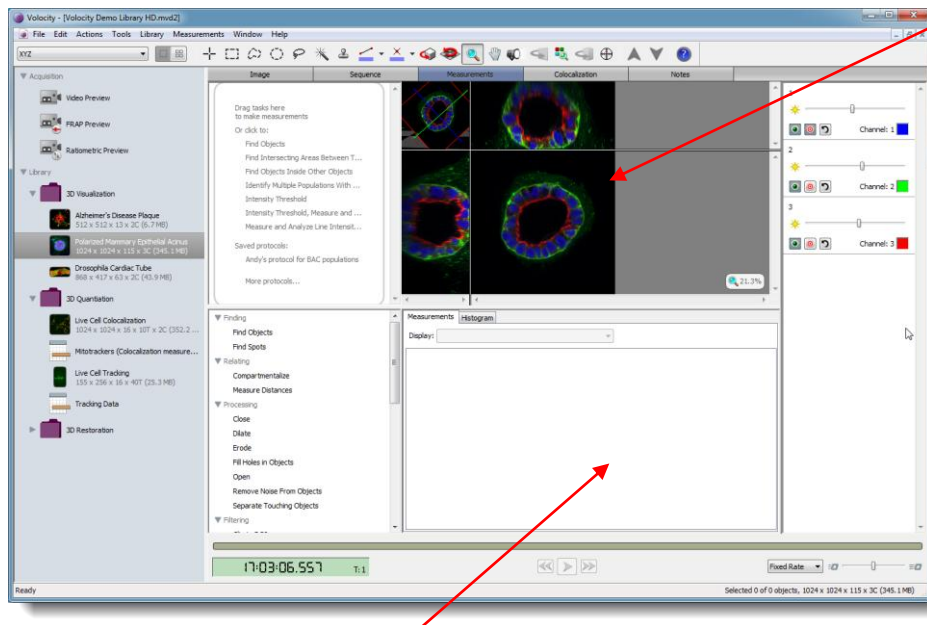
Polarized mammary epithelial acinus

Dataset courtesy of Professor Charles Streuli and Dr Nasreen Akhtar, Manchester Breast Centre, University of Manchester, UK.

Workflow

Click once on the data in the library list and click on the Measurements tab to display the Measurement View. In the Measurement View you can see the image, in the mode that best shows the objects to be measured and an area below it where all measurements will be stored.

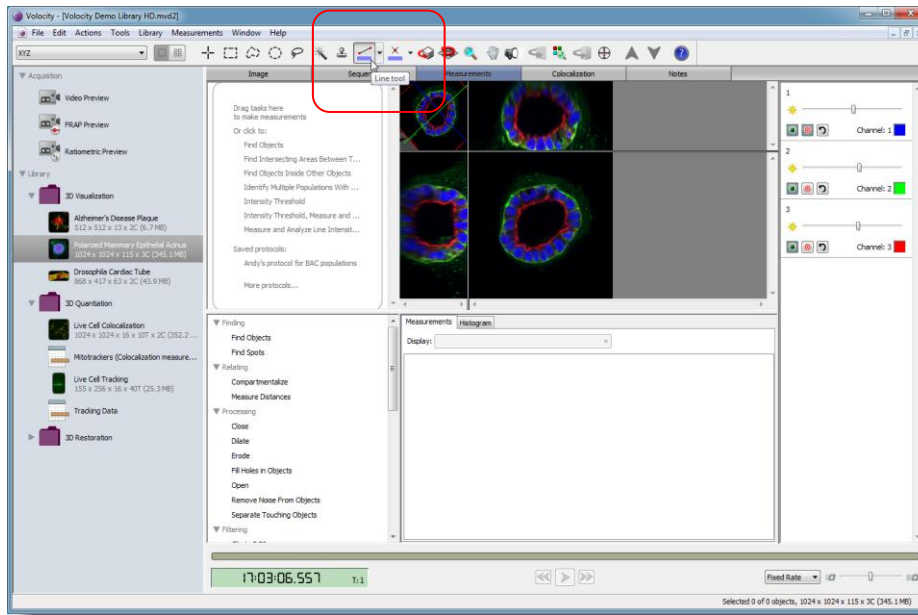
Image preview shows feedback as measurements are made



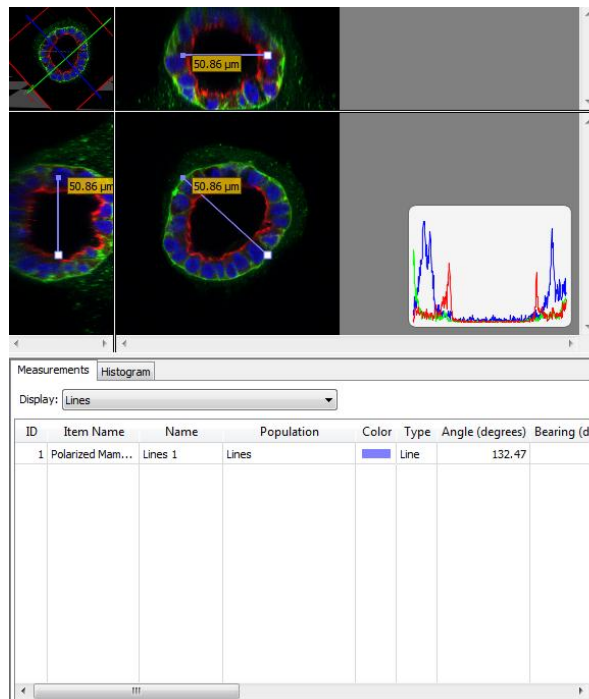
Measurements are shown here as a table or histogram

1) **Measuring Length** - This section will demonstrate how to measure lengths, for example the diameter of a structure or a space.

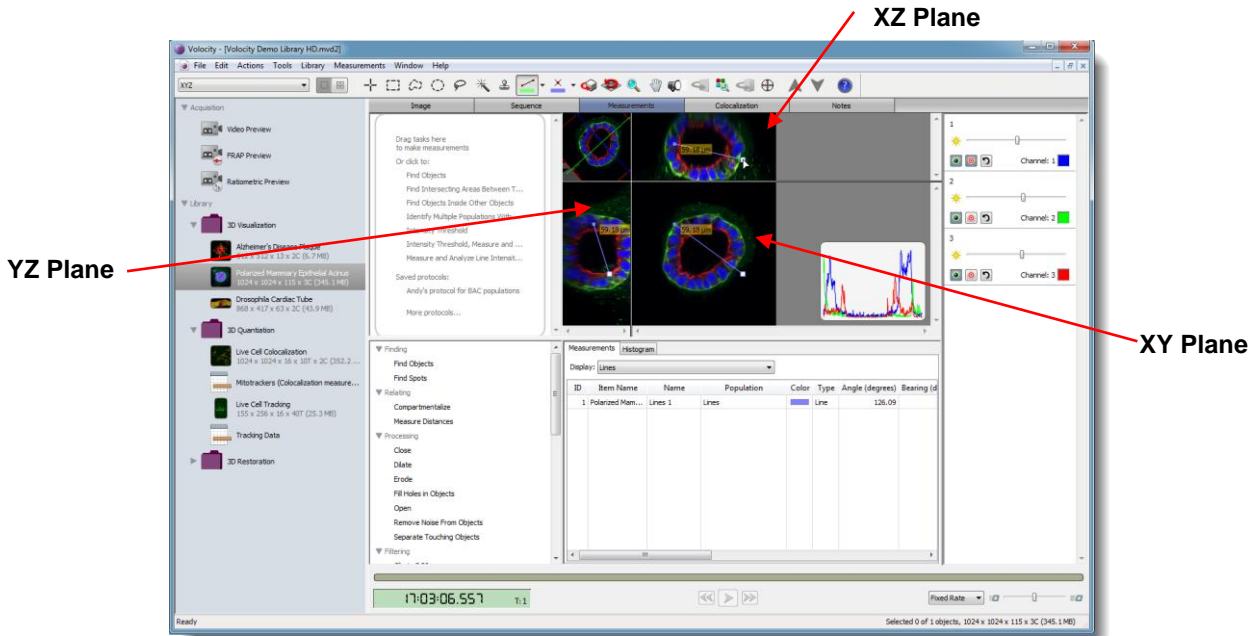
Select the line tool from the toolbar at the top of the image.



Click on the image where the start point of the line is to be, hold the **shift** key and click where the end point of the line will be.

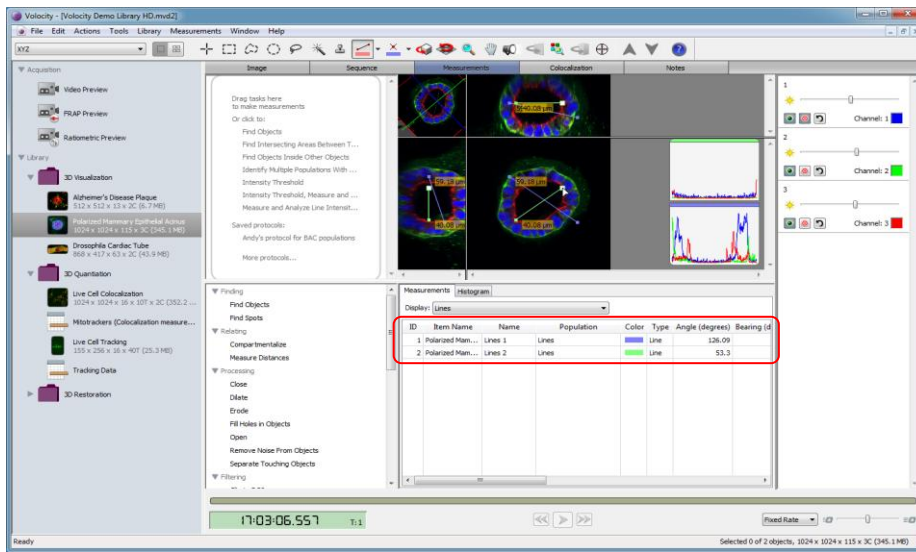


In the XYZ image mode, the points on the line may be positioned and repositioned in any part of the view.



The line length is shown next to the line and an overlay panel is displayed alongside the line, showing the intensity profile for all channels along that line. Other properties of the line are shown in the measurements table below the image.

Release the shift key and click on the image to start a new line. Each line will be given a different ID number and color.

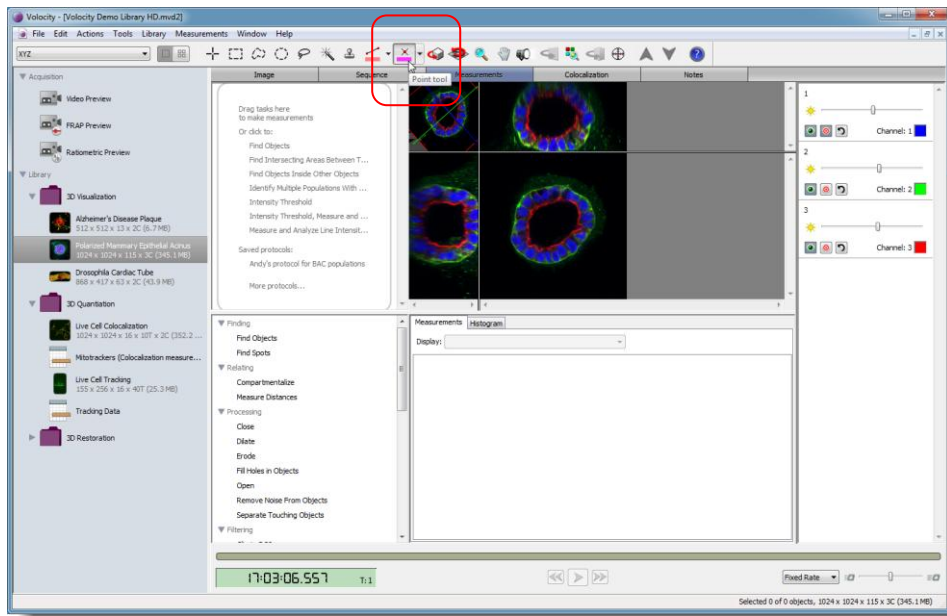


Delete a line by clicking at any position on the line and using Delete (Windows®) or backspace (Mac OS®).

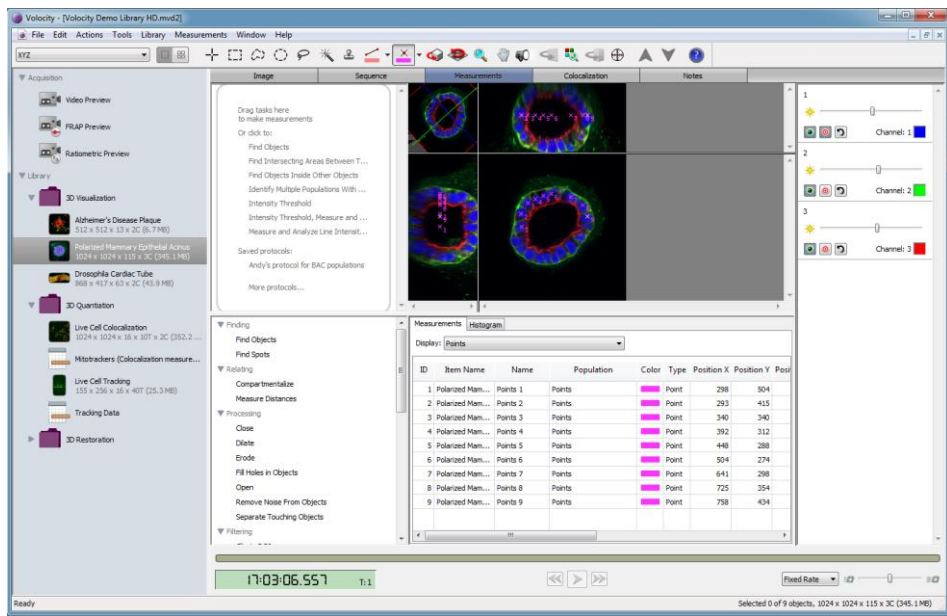
You can clear all the lines on an image by choosing **Select None** from the Edit menu.

2) **Point Counting** - This section will demonstrate how to use the point counting tool to simply count objects within the image.

Select the Point tool from the toolbar at the top of the image.

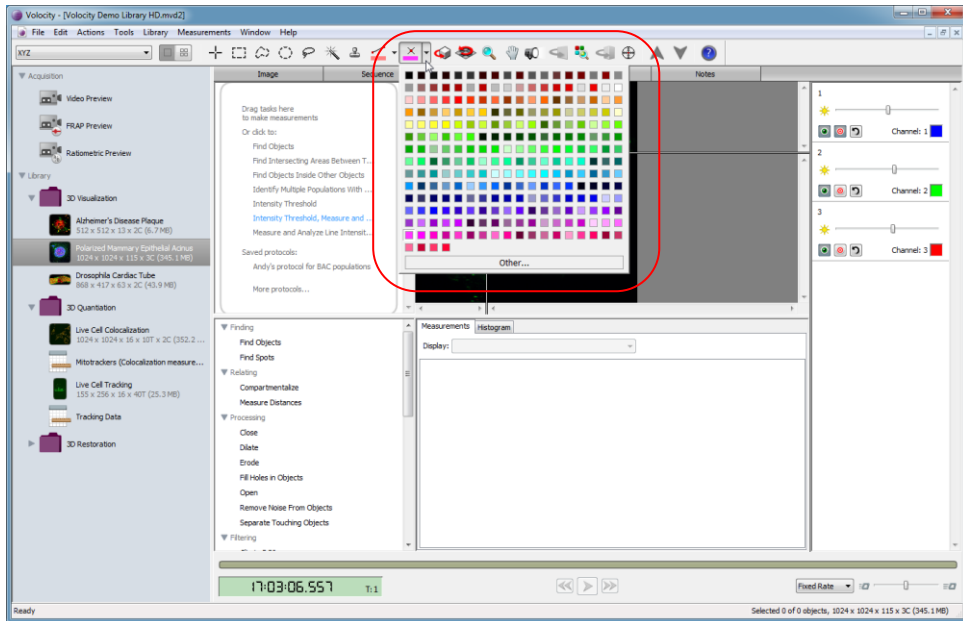


Each click of the mouse will add a point, incrementing the count by one. Information about each point is stored in the measurements table below the image.



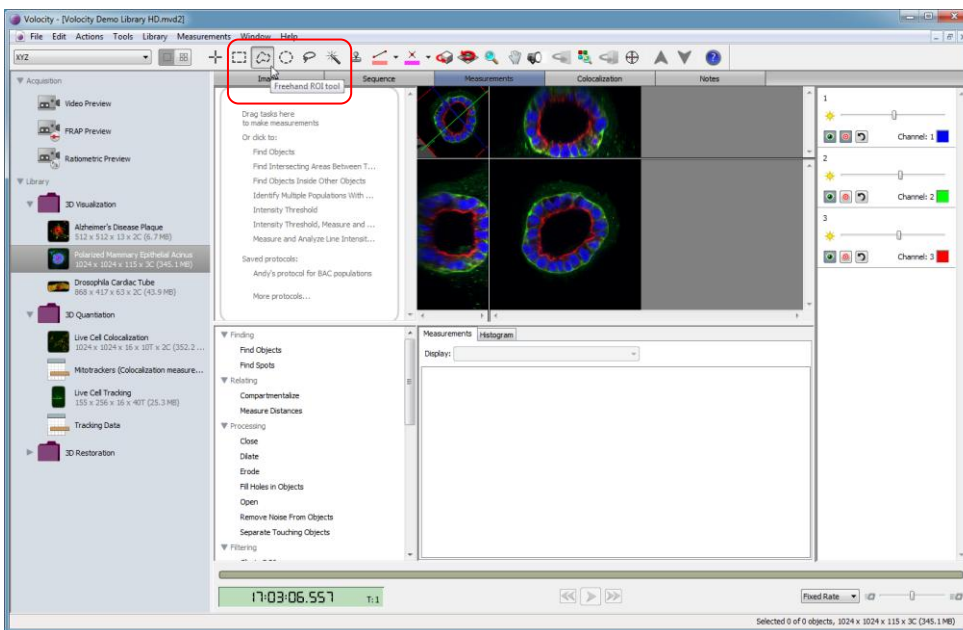
Clear all the points on the image by choosing **Select None** from the Edit menu.

To start a new series of points, for example to count a different type of object, change the color of the point tool. Go the menu next to this tool and select a new color.

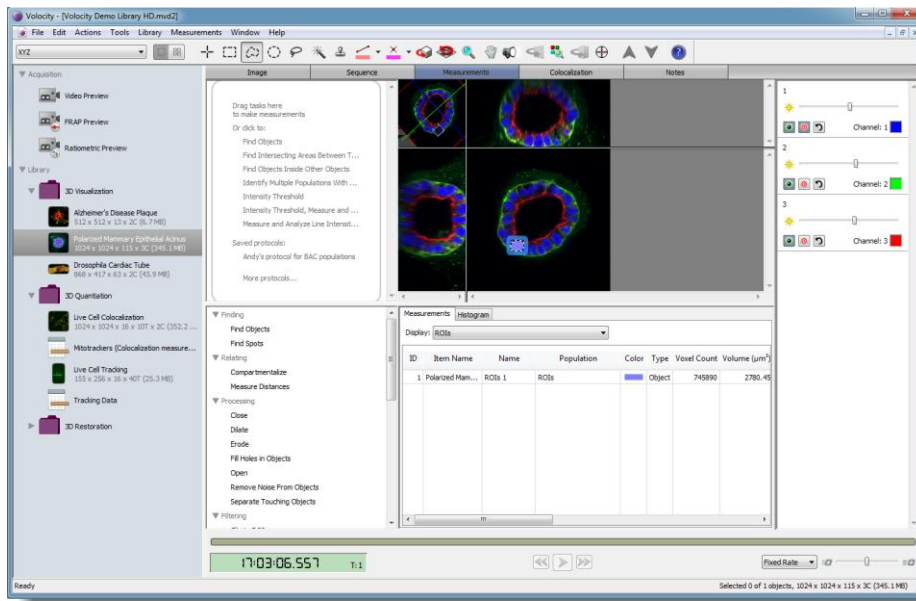


3) **Measure Objects** - This section will demonstrate how to use a region of interest (ROI) to define an object and find information such as volume and mean signal intensity in grey levels.

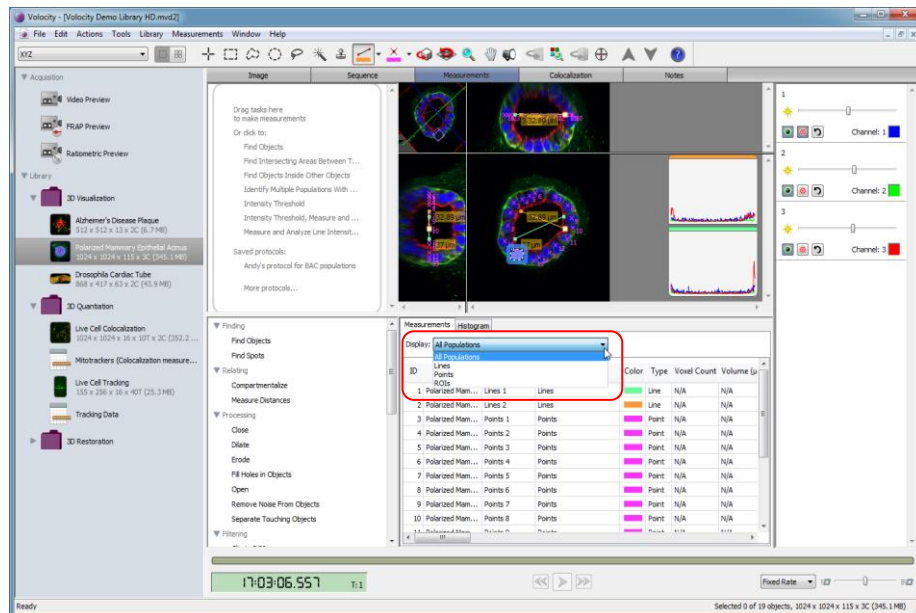
Draw regions using the ROI tools, selected from the toolbar at the top of the image.



Draw around your object of interest and information about the region drawn is stored in the measurements table below the image.

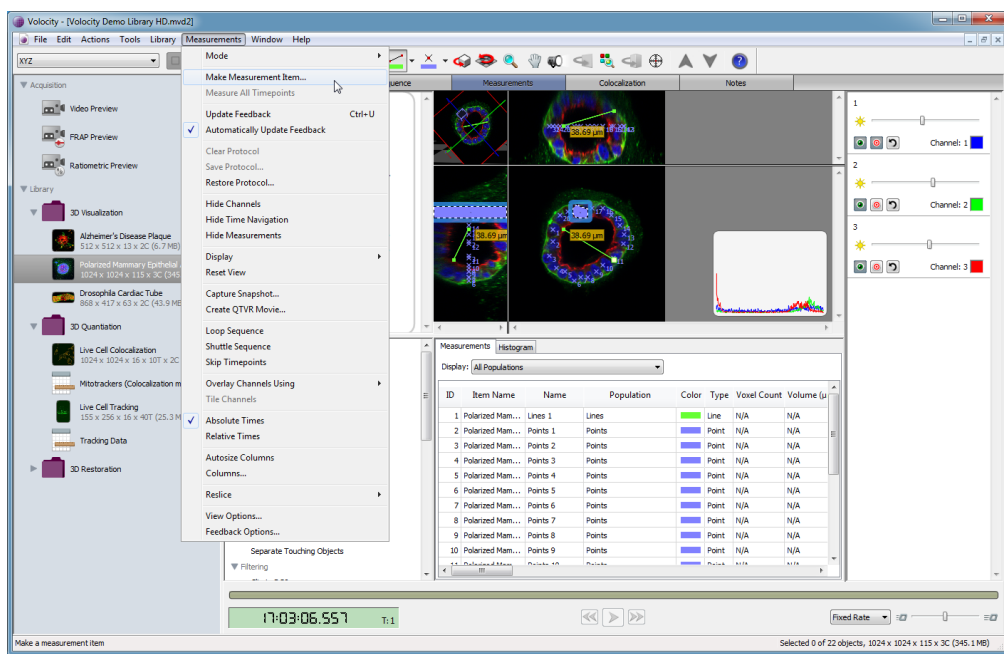


Lines, points and ROIs may all be measured in one session, but are always grouped in populations by type. Use the display pop-up to view individual populations or all populations at once.



Next Steps

Any measurements (points, lines and/or objects, etc) made in the Measurements View may be stored in table format as a separate item within the library. From the Measurements menu, select **Make Measurement Item...** This table may be viewed in Volocity and exported.



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