

Engine Context

Engine context variables are distinct data points with assorted values. Each context variable (for example, device type) is a piece of information about your customers that the Personalization engine uses when it makes one-to-one decisions. The values of each context variable directly influence the engine and the results you can achieve.

Context variables can contain numerical, categorical, or true/false (Boolean) values. Be mindful of the number of context variables you select and the number of values associated with each selected context variable. Reducing the variable and value counts while maintaining informative context can facilitate faster learning and improve interpretability. Consider how the data can influence machine learning decisions for your customers and less as rules and segments.

Available Context

The table below describes the types of data that context variables support.

Data Type	Possible Values	Usage Example	Level of Measurement
Numeric	Integer or real number	Relative score, significant only for creating a ranking, such as a customer lifetime value or visit duration	Ordinal scale
Categorical	1, 2, K	Categorical outcome, such as device type, browser, or brand affinity	Nominal scale
True/false (Boolean)	0, 1	Binary outcome—yes/no or true/false—such as loyalty member or VIP customer	Nominal scale

Recommended Context Variables

Monetate by default enables the context variables in the table below when you access the Engine Context settings for the first time.

Context Variable	Category	Type	Description
Time of Day	Time of Arrival	Categorical	The time of day when a visitor arrives on your site (overnight, morning, afternoon, or evening)
Day of Week	Time of Arrival	Categorical	The day of week when a visitor arrives on your site (Monday–Sunday)
Country	Location	Categorical	The country in which a visitor is located when they arrive on your site

Context Variable	Category	Type	Description
Census Region	Location	Categorical	A visitor's census region when they arrive on your site (US only)
Device Type	Device	Categorical	A visitor's device type
Browser	Device	Categorical	A visitor's Web browser type
Operating System	Device	Categorical	A visitor's operating system
Screen Height	Device	Numeric	The screen height of a visitor's device
Screen Width	Device	Numeric	The screen width of a visitor's device
New Visitor	Landing	True/false	Considers whether a visitor has been to your site before
Median Household Income	Demographics	Numeric	The median household income for a visitor's region
Population Density	Demographics	Numeric	The population density for a visitor's region
Forecast Precipitation	Weather	True/false	Considers whether precipitation is forecast for a visitor's location in the next 48 hours
Forecast High Temperature	Weather	Categorical	The high temperature forecast for a visitor's location in the next 48 hours (freezing, cold, warm, hot)
Forecast Low Temperature	Weather	Categorical	The low temperature forecast for a visitor's location in the next 48 hours (freezing, cold, warm, hot)
Visit Duration	Session Counts	Numeric	Duration of time between a visitor landing on a page and when they make their first decision
Number of Page Views	Session Counts	Numeric	Total number of pages a visitor viewed while on your site
Number of Purchases Past 30 Days	Products	Numeric	Total number of purchases a visitor made in the past 30 days
Number of Products in Cart	Products	Numeric	Total number of products in a visitor's cart while on your site
Number of Products Viewed	Products	Numeric	Total number of product pages a visitor viewed while on your site
Amount in Cart	Products	Numeric	Total value in a visitor's cart

Custom Context Variables

Monetate offers additional context variables to supplement the recommended ones. If you decide to expand beyond the recommended set, ensure you can articulate a compelling story about why the custom context helps match certain visitors to one experience variant rather than another.

Context Variable	Category	Type	Description
Product Type (New Catalog Spec) Purchased in Past 30 Days	Products	True/false	Considers up to 10 product categories purchased by a visitor in the past 30 days, including current session
Product Type (New Catalog Spec) Viewed in Past 30 Days	Products	True/false	Considers up to 10 product categories viewed by a visitor in the past 30 days, including the current session
Automated Personalization	Experiences Viewed	Categorical	Considers other Automated Personalization experiences a visitor viewed in session
Dynamic Testing	Experiences Viewed	Categorical	Considers other Dynamic Testing experiences a visitor viewed in session
Web Targets	Custom Targets: In Session Attributes	N/A	N/A
Datasets	Datasets: Offline Customer Attributes	N/A	N/A

You can configure context settings within Monetate at both the account level and the experience level.

Configuring Account-Level Context Settings

To access account-level context settings, select **Engine Context** from the platform settings menu.

Adjust the context configurations for your account on the Engine Context page. These settings automatically apply to any new Automated Personalization experiences. The number of context variables currently enabled for your account appears at the top of the screen.

Your aim is not to select the most variables. Selecting context variables requires discipline because many factors can impact learning time for an Automated Personalization experience. As a general rule, the more context you select, the longer it may take for the engine to learn and optimize. The engine looks for patterns across your selected context to assign the best-fit variant to each customer to optimize your goal metric.

Configuring Experience-Level Context

When you select Automated Personalization for a Web experience you're building, the engine copies the current account-level context configuration into the experience. You can configure the engine context for each Automated Personalization experience in the HOW settings.

You can't change experience-level context after activating a Web experience. Ensure you include the most valuable information for the engine to consider when intelligently assigning visitors to your site before you activate the experience.

When the mouse pointer hovers over **Context Variables** in the Engine Context counter, a list of all the context variables in use for the experience appear in a modal.

To add or remove context variables specifically for this experience, either click **EDIT** that appears beside the Engine Context heading, or click one of the context variables that appears in the modal. Each action has the same result: All the engine context options load on the screen so that you can edit them without leaving the HOW settings.

Changes that you make at the experience level only affect the context for the Web experience you are editing. If you want to edit your account's default context, review the instructions in the [Configuring Account-Level Context Settings](#) in this documentation.

Click to select or remove context variables as necessary for the Web experience. If you need to reset the changes to the Account Context default, click **RESET TO ACCOUNT DEFAULT**.

Once you finish editing the context variables, click **SAVE**.

Technical Considerations

Some context variables in Monetate contain specific technical details. Read on to ensure you have a more complete understanding of engine context and how each context variable may affect the way the engine makes decisions.

Time of Day

Based on a 24-hour clock using the time zone of the visitor and segmented as follows:

Hours	Time
0-5	Overnight
6-11	Morning
12-17	Afternoon

Hours	Time
18–23	Evening

Device Type

This variable uses the user agent string of the visitor's device to determine desktop, mobile, tablet, or other device type.

Browser

This variable uses the user agent string of the visitor's device to determine the Web browser.

Operating System

This variable uses the user agent string of the visitor's device to determine the operating system.

Country

This variable is determined by a visitor's IP address.

Census Region

This variable uses the visitor's IP address to determine in which of the nine geographic regions of the US the visitor is located.

New Visitor

This variable looks for the presence of a Monetate cookie to determine if the visitor is returning to the site after a previous visit.

Median Household Income

This variable currently covers the US and the European Union. It is standardized across the data source for each respective region. Through using the same standardization process for both regions, the engine can learn and evaluate visitors from different countries and currencies within one context variable. All US demographic context is based on data from 2020 US Census, and all EU demographic context is based on data from Eurostat.

Population Density

This variable currently covers the US and the European Union. It is expressed in the number of individuals per square kilometer, allowing the engine to learn and evaluate visitors from different countries within one context variable. All US demographic context is based on data from 2020 US Census, and all EU demographic context is based on data from Eurostat.

Forecast Precipitation

This variable considers if a greater than 0% chance of precipitation of any kind is forecast for the next 48-hour interval, including sleet, freezing rain, rain, and snow.

Forecast High & Low Temperatures

This variable considers the forecasted high and low temperatures for the next 48-hour interval are bucketed into the following categories:

Category	Temperature in Fahrenheit	Temperature in Celsius
Freezing	Less than 32°	Less than 0°
Cool	32° to 60°	0° to 15.5556°
Warm	60° to 80°	15.5556° to 26.6667°
Hot	Greater than 80°	Greater than 26.6667°

Visit Duration

This variable considers the time from when the visitor's session started to when the visitor made a decision.

Number of Page Views

This variable considers the number of page views from session start to decision time.

Number of Products in Cart

This variable considers the number of products in the cart from session start to decision time. If a visitor previously abandoned the cart, the engine still considers the cart quantity.

Number of Products Viewed

This variable considers the number of products viewed from session start to decision time.

Amount in Cart

This variable considers the amount in cart from session start to decision time. If a visitor previously abandoned the cart, the engine still considers the cart value.