Custom load shape types​

Custom load shapes can simulate various real-world scenarios in e-commerce platforms, helping to understand how these systems perform under different user behaviours and load patterns. Below are practical e-commerce examples for different custom load shapes:

**1. Step Load**

* Description: Increases the number of users in steps, maintaining each level for a certain period before jumping to the next higher level.​
* Chart Appearance: Looks like a staircase, with flat lines representing periods of stable user count followed by sharp increases.​

- Scenario: An e-commerce platform introduces a series of flash sales throughout a day with increasing discounts. Each sale potentially brings a larger wave of users as the discounts deepen, creating distinct steps in user load.

- Example: A Black Friday event where every hour, a new category of products goes on sale, starting with electronics, then fashion, home goods, etc., each attracting more users.

**2. Linear Load**

* Description: Gradually increases the number of users at a constant rate over time.​
* Chart Appearance: A straight line that slopes upwards, representing the continuous increase in user count.

- Scenario: A gradual increase in visitors to an e-commerce site over several hours as a marketing campaign ramps up, leading to a linear increase in load as more users become aware of the campaign and visit the site.

- Example: A day-long global launch of a new product line where marketing across different time zones leads to a steady increase in site traffic.

**3. Spike Load**

* Description: Maintains a baseline of users and then suddenly spikes to a much higher number for a short period before dropping back to the baseline.​
* Chart Appearance: Mostly flat, with sudden, sharp peaks at intervals, resembling spikes.

- Scenario: A sudden announcement of a limited-time offer on a popular product leads to a sharp spike in users trying to take advantage of the offer before it expires.

- Example: An unexpected announcement on social media about a 50% off deal on high-demand items like sneakers, causing a sudden influx of buyers.

**4. Bell Shape**

* Description: Gradually increases the number of users to a peak and then decreases them in a symmetric manner, resembling a bell curve.​
* Chart Appearance: A smooth curve that rises to a peak and then falls, forming a shape similar to a bell or a hill.

- Scenario: User activity increases in the morning, peaks around noon when people are on their lunch breaks, then gradually decreases through the afternoon, creating a bell-shaped load pattern.

- Example: A one-day special promotion that starts at 9 AM and ends at 9 PM, with the highest activity expected around lunchtime and early evening.

**5. Sinusoidal Load**

* Description: Varies the number of users in a wave-like pattern, simulating peaks and troughs in user activity.​
* Chart Appearance: A wavy line that oscillates above and below a baseline, similar to a sine wave.​

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- Scenario: Daily fluctuations in user activity that peak at specific times, like lunch hours and late evenings, then drop, mimicking a wave pattern, common in global platforms serving users across different time zones.

- Example: An international e-commerce platform experiences waves of activity corresponding to peak shopping hours in different continents—morning in Asia, midday in Europe, and evening in North America.

**6. Sudden Drop**

* Description: Increases the number of users and then suddenly drops all or most of them, simulating a crash or a significant drop in users.​
* Chart Appearance: An upward slope followed by a steep or vertical drop.

- Scenario: A site experiences a surge in traffic due to a major sale event but then faces a sudden drop, possibly due to site issues or the end of a flash sale.

- Example: A Cyber Monday event where the site crashes due to the load, leading to a sudden drop in active users, or the end of a limited-time offer causing users to leave the site.

**7. Random Load**

* Description: Varies the number of users randomly over time, without a predictable pattern.​
* Chart Appearance: An erratic line with no discernible pattern, going up and down randomly.

- Scenario: User activity varies unpredictably due to factors like viral marketing, social media trends, or unexpected events, leading to erratic spikes and drops in site traffic.

- Example: An influencer tweets about a product from the e-commerce site, causing unpredictable spikes in traffic as the tweet gains attention at different times.

**8. Double Wave**

* Description: simulated user load increases and decreases in two distinct waves or cycles during the test period.​
* Chart Appearance: two successive waves with troughs and crests, hence the name "Double Wave.

- Scenario: An e-commerce site holds two back-to-back sales in one day, **with** a period of normal activity between them, leading to two distinct waves of user activity.

- Example: A "Sunrise and Sunset Sale," where the site offers special discounts early in the morning and then again in the late afternoon, catering to different shopping habits and creating two peak periods.

Custom load testing using these patterns allows e-commerce sites to prepare for real-world scenarios, ensuring they can handle peak loads, maintain performance, and provide a good user experience under various conditions.