

- 1
- Introduction
- 1

WCU stands for Write Capacity Unit
- 2

It determines how much data your application can write to the database each second
- 3

To decide the write capacity of your DynamoDB table, you need to calculate the WCUs based on your application's data size, write frequency, and write consistency settings
- 4

This ensures your table can handle the required workload efficiently

- 1
- Item Size
- 1

A write operation processes data in blocks of up to 1 KB
- 2

If your item size is more than 1 KB, it is rounded up to the nearest 1 KB block
- 3

Example

1

1.5 KB item → Rounded up to 2 KB

2

2.2 KB item → Rounded up to 3 KB

- 2
- Write Consistency
- The write consistency setting (standard vs. transactional) impacts the final WCU consumption

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Standard writes in DynamoDB consume 1 WCU to write 1 KB of data per second
- 2

If the data size exceeds 1 KB, DynamoDB calculates WCUs based on multiples of 1 KB

- 2
- Formula
- $$WCUs = \lceil \frac{\text{Item Size in KB}}{1} \rceil \times \text{Writes per second}$$

- 3
- Standard Writes
- 1

Scenario-1

1

Item Size

1 KB

2

Writes per second

100

3

Calculation

$$WCUs = \lceil \frac{1}{1} \rceil \times 100 = 100$$
- 2

Scenario 2

1

Item Size

1.5 KB

2

Writes per second

50

3

Calculation

$$WCUs = \lceil \frac{1.5}{1} \rceil \times 50 = 2 \times 50 = 100$$
- 3

Scenario 3

1

Item Size

1 KB

2

Writes per minute

3,000

Convert to writes per second

$$\frac{3000}{60} = 50$$

3

Calculation

$$WCUs = \lceil \frac{1}{1} \rceil \times 50 = 50$$

- 4
- Transactional Writes
- 1

Introduction

Transactional writes consume double the WCUs of standard writes due to the additional consistency mechanisms
- 2

Formula

$$WCUs = 2 \times \left(\lceil \frac{\text{Item Size in KB}}{1} \rceil \times \text{Writes per second} \right)$$

Total WCUs = 2 × (Item size in KB / 1 KB rounded up) × Writes per second
- 3

Example Scenarios

1

Scenario 1

Item size = 1 KB, Writes per second = 100 → Total WCUs = 200

2

Scenario 2

Item size = 2 KB, Writes per second = 25 → Total WCUs = 100

