

Cart Management

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Short Description: The Cart Management API provides shopping cart functionality for the NextGate e-commerce platform. It supports adding products to cart, updating quantities, removing items, and real-time stock validation.

Base URL: `api/v1/e-commerce/cart`

Hints:

- All cart operations require user authentication via Bearer token
- Each user has one persistent cart that maintains state across sessions
- Real-time stock validation prevents overselling
- Adding an existing product updates its quantity (additive)
- Cart persistence survives user logout/login cycles

Endpoints

1. Add Product to Cart

Purpose: Adds a product to the user's cart or updates quantity if already exists

Endpoint: `POST` `{base}/add`

Access Level: Protected (Requires authentication)

Authentication: Bearer Token

Request Headers:

Header	Type	Required	Description
Authorization	string	Yes	Bearer token for authentication
Content-Type	string	Yes	application/json

Request JSON Sample:

```
{
  "productId": "456e7890-e89b-12d3-a456-426614174001",
  "quantity": 2
}
```

Request Body Parameters:

Parameter	Type	Required	Description	Validation
productId	UUID	Yes	ID of the product to add	Not null, product must exist and be active
quantity	integer	Yes	Quantity to add to cart	Min: 1

Response JSON Sample (New Item):

```
{
  "success": true,
  "message": "Product added to cart successfully",
  "data": null
}
```

Response JSON Sample (Updated Existing):

```
{
  "success": true,
  "message": "Product quantity updated in cart successfully",
  "data": null
}
```

Business Logic:

- Creates cart automatically if one doesn't exist
- If product already in cart, adds to existing quantity
- Validates total quantity doesn't exceed available stock
- Only allows active products to be added

Error Responses:

- **400 Bad Request**: Invalid productId or quantity validation error
- **401 Unauthorized**: Authentication required
- **404 Not Found**: Product not found or not active
- **422 Unprocessable Entity**: Insufficient stock available

Error Examples:

```
{
  "success": false,
  "message": "Insufficient stock for 'iPhone 15 Pro'. Only 3 units available",
  "data": null
}
```

```
{
  "success": false,
  "message": "Cannot add more items. Total quantity (8) would exceed available stock (5) for 'MacBook Pro'",
  "data": null
}
```

2. Get Shopping Cart

Purpose: Retrieves the complete shopping cart with all items and pricing

Endpoint: `GET` `{base}`

Access Level: Protected (Requires authentication)

Authentication: Bearer Token

Request Headers:

Header	Type	Required	Description
Authorization	string	Yes	Bearer token for authentication

Response JSON Sample:

```
{
  "success": true,
  "message": "Shopping cart retrieved successfully",
  "data": {
    "user": {
      "userId": "111e2222-e89b-12d3-a456-426614174003",
      "userName": "john.doe",

```

```
    "name": "John Doe"
  },
  "cartSummary": {
    "totalItems": 2,
    "totalQuantity": 3,
    "subtotal": 2198.00,
    "totalDiscount": 0.00,
    "totalAmount": 2198.00
  },
  "cartItems": [
    {
      "itemId": "cart001-e89b-12d3-a456-426614174004",
      "productId": "456e7890-e89b-12d3-a456-426614174001",
      "productName": "iPhone 15 Pro Max 512GB",
      "productSlug": "iphone-15-pro-max-512gb",
      "productImage": "https://example.com/images/iphone15-pro-max.jpg",
      "productType": "PHYSICAL",
      "unitPrice": 1199.00,
      "quantity": 2,
      "itemSubtotal": 2398.00,
      "totalPrice": 2398.00,
      "shop": {
        "shopId": "123e4567-e89b-12d3-a456-426614174000",
        "shopName": "TechStore Pro",
        "shopSlug": "techstore-pro",
        "logoUrl": "https://example.com/logos/techstore-pro.png"
      },
      "availability": {
        "inStock": true,
        "availableQuantity": 25,
        "maxPerCustomer": 5
      },
      "addedAt": "2025-09-23T10:30:00Z"
    },
    {
      "itemId": "cart002-e89b-12d3-a456-426614174005",
      "productId": "567e8901-e89b-12d3-a456-426614174002",
      "productName": "MacBook Air M3",
      "productSlug": "macbook-air-m3",
      "productImage": "https://example.com/images/macbook-air-m3.jpg",
```

```
    "productType": "PHYSICAL",
    "unitPrice": 999.00,
    "quantity": 1,
    "itemSubtotal": 999.00,
    "totalPrice": 999.00,
    "shop": {
      "shopId": "123e4567-e89b-12d3-a456-426614174000",
      "shopName": "TechStore Pro",
      "shopSlug": "techstore-pro",
      "logoUrl": "https://example.com/logos/techstore-pro.png"
    },
    "availability": {
      "inStock": true,
      "availableQuantity": 8,
      "maxPerCustomer": null
    },
    "addedAt": "2025-09-23T11:15:00Z"
  }
],
"updatedAt": "2025-09-23T14:20:00Z"
}
```

Response Structure:

User Summary

Field	Description
userId	Unique identifier of the cart owner
userName	User's login username
name	User's full name (firstName + lastName)

Cart Summary

Field	Description
totalItems	Number of distinct products in cart
totalQuantity	Total quantity of all items combined
subtotal	Total price before discounts

Field	Description
totalDiscount	Total discount amount applied
totalAmount	Final amount after discounts

Cart Item Details

Field	Description
itemId	Unique identifier for the cart item
productId	Product identifier
productName	Current product name
productSlug	URL-friendly product identifier
productImage	Primary product image URL
productType	PHYSICAL or DIGITAL
unitPrice	Current product price per unit
quantity	Quantity of this product in cart
itemSubtotal	unitPrice × quantity
totalPrice	itemSubtotal after discounts
shop	Shop information (id, name, slug, logo)
availability	Real-time stock information
addedAt	When item was first added to cart

Product Availability

Field	Description
inStock	Whether the product is currently in stock
availableQuantity	Current available inventory
maxPerCustomer	Maximum quantity a single customer can purchase (null if no limit)

Error Responses:

- `401 Unauthorized`: Authentication required
 - `404 Not Found`: User not found
-

3. Update Cart Item Quantity

Purpose: Updates the quantity of a specific item in the cart

Endpoint: **PUT** `{base}/items/{itemId}`

Access Level: Protected (Requires authentication)

Authentication: Bearer Token

Request Headers:

Header	Type	Required	Description
Authorization	string	Yes	Bearer token for authentication
Content-Type	string	Yes	application/json

Path Parameters:

Parameter	Type	Required	Description
itemId	UUID	Yes	ID of the cart item to update

Request JSON Sample:

```
{
  "quantity": 3
}
```

Request Body Parameters:

Parameter	Type	Required	Description	Validation
quantity	integer	Yes	New quantity for the cart item	Min: 1

Response JSON Sample:

```
{
  "success": true,
  "message": "Product quantity updated successfully",
  "data": null
}
```

Business Logic:

- Updates quantity to the exact specified value (not additive)
- Validates new quantity doesn't exceed current stock
- Only allows updating items in the authenticated user's own cart

Error Responses:

- `400 Bad Request`: Invalid quantity value
- `401 Unauthorized`: Authentication required
- `404 Not Found`: Cart item not found in user's cart
- `422 Unprocessable Entity`: Insufficient stock for requested quantity

Error Example:

```
{
  "success": false,
  "message": "Insufficient stock for 'iPhone 15 Pro'. Only 2 units available",
  "data": null
}
```

4. Remove Cart Item

Purpose: Removes a specific item completely from the cart

Endpoint: `DELETE` `{base}/items/{itemId}`

Access Level: `🔒` Protected (Requires authentication)

Authentication: Bearer Token

Request Headers:

Header	Type	Required	Description
Authorization	string	Yes	Bearer token for authentication

Path Parameters:

Parameter	Type	Required	Description
itemId	UUID	Yes	ID of the cart item to remove

Response JSON Sample:

```
{
  "success": true,
  "message": "Product removed from cart successfully",
  "data": null
}
```

Business Logic:

- Completely removes the cart item and all its quantity
- Only allows removing items from the authenticated user's own cart

Error Responses:

- `401 Unauthorized`: Authentication required
- `404 Not Found`: Cart item not found in user's cart

5. Clear Shopping Cart

Purpose: Removes all items from the user's cart

Endpoint: `DELETE` `{base}/clear`

Access Level: `[[` Protected (Requires authentication)

Authentication: Bearer Token

Request Headers:

Header	Type	Required	Description
Authorization	string	Yes	Bearer token for authentication

Response JSON Sample:

```
{
  "success": true,
  "message": "Shopping cart cleared successfully",
  "data": null
}
```

Business Logic:

- Removes all cart items for the authenticated user
- Cart entity remains but becomes empty

Error Responses:

- `401 Unauthorized`: Authentication required
 - `404 Not Found`: User not found
-

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