

Incomplete Mediation - The Shopping Cart Attack

order=(#2956,10,9,90)





Server Trusted
Domain

Client Trusted Domain

amazon.com

Hello. [Sign in](#) to get personalized recommendations. New customer? [Start here.](#)[Your Amazon.com](#)[Today's Deals](#)[Gifts & Wish Lists](#)[Gift Cards](#)[Your Account](#)[Help](#)[Shop All Departments](#)Search: [Cart](#)[Wish List](#)

Earn **\$50 Cash Back** after your first card purchase,
And get **5% Cash Back** in bonus categories with Chase Freedom®.

[Learn more](#)

Shopping Cart Already a customer?
[Sign in](#)

[See more items like these in your cart](#)subtotal = **\$5.49**[Make any changes below?](#) [Update](#)

Shopping Cart Items—To Buy Now

Price:

Qty:

Item added on
November 20,
2009

[Live Free or Die Hard \(Unrated Edition\)](#) - Bruce Willis, DVD

Condition: New

Includes Video On Demand 24 hour
rental as a gift with purchase

[Live Free or Die](#)

In Stock

[Details](#)

Eligible for FREE Super Saver Shipping

\$5.49

You Save:
\$9.49 (63%)

Add **\$19.99** of eligible
items to your order to
qualify for **FREE Super
Saver Shipping**.

[See details](#)[Proceed to Checkout](#)

[Sign in](#) to turn on 1-Click
ordering.

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[Live Free or Die
Hard \(Unrated
Edition\) DVD](#) - Bruce
Willis

*Notice that Annaz is not able to do this attack

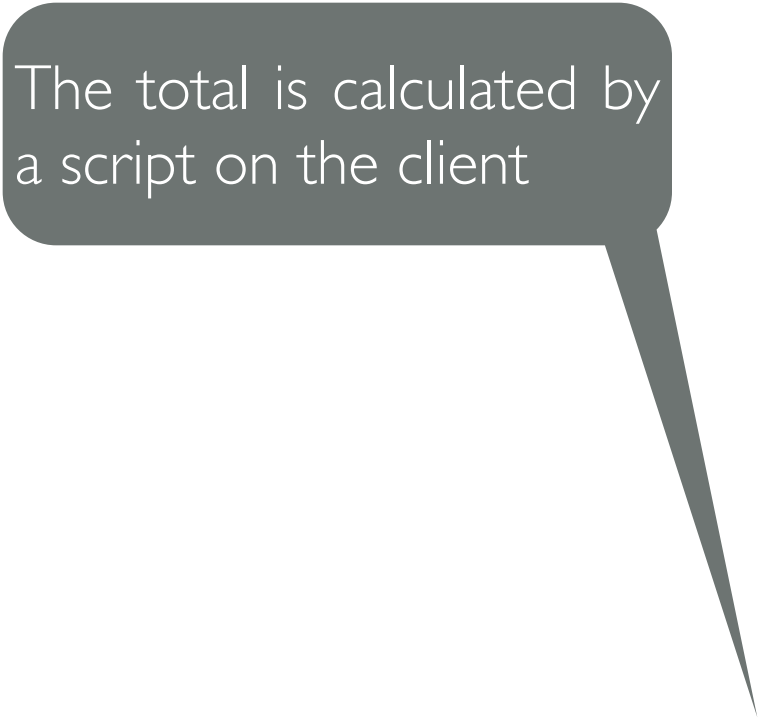


Thank you for your order!



amazon.com

The Amazon logo, featuring a curved orange arrow pointing from the letter 'a' to the letter 'z'.



The total is calculated by
a script on the client

The order is generated
based on the request

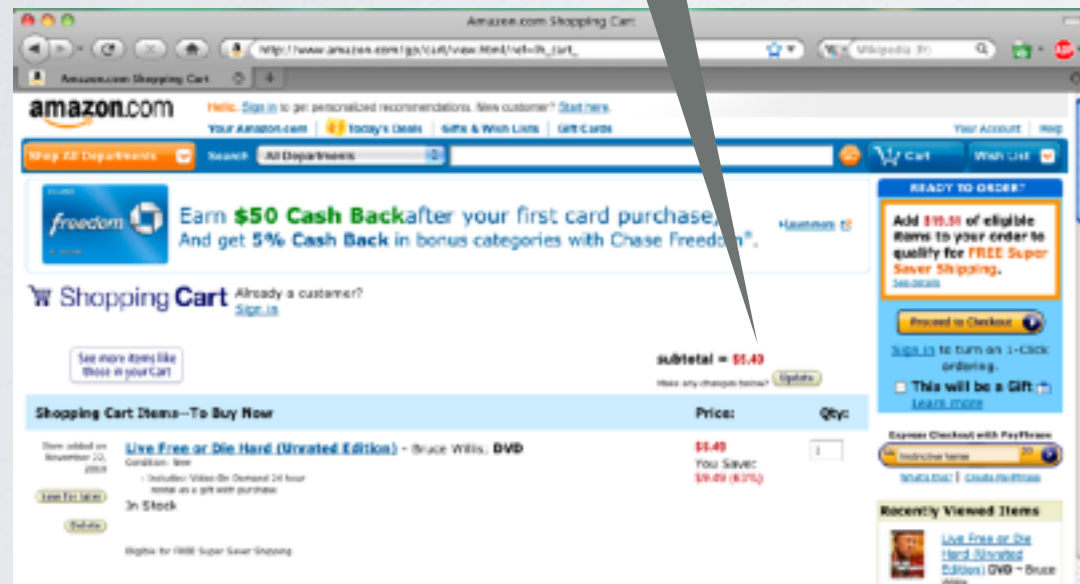
1

10

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The total is calculated by a script on the client

The order is generated based on the request



Client Trusted Domain

*

order=(#2956, 10, 1, 10)

Thank you for your order!

amazon.com



Server Trusted Domain

* Notice that Amazon is **not** vulnerable to this attack

The backend is the **only trusted domain**

- Data coming from the frontend cannot be trusted
- ✓ Sensitive operations must be done on the backend