

First Data Corp.

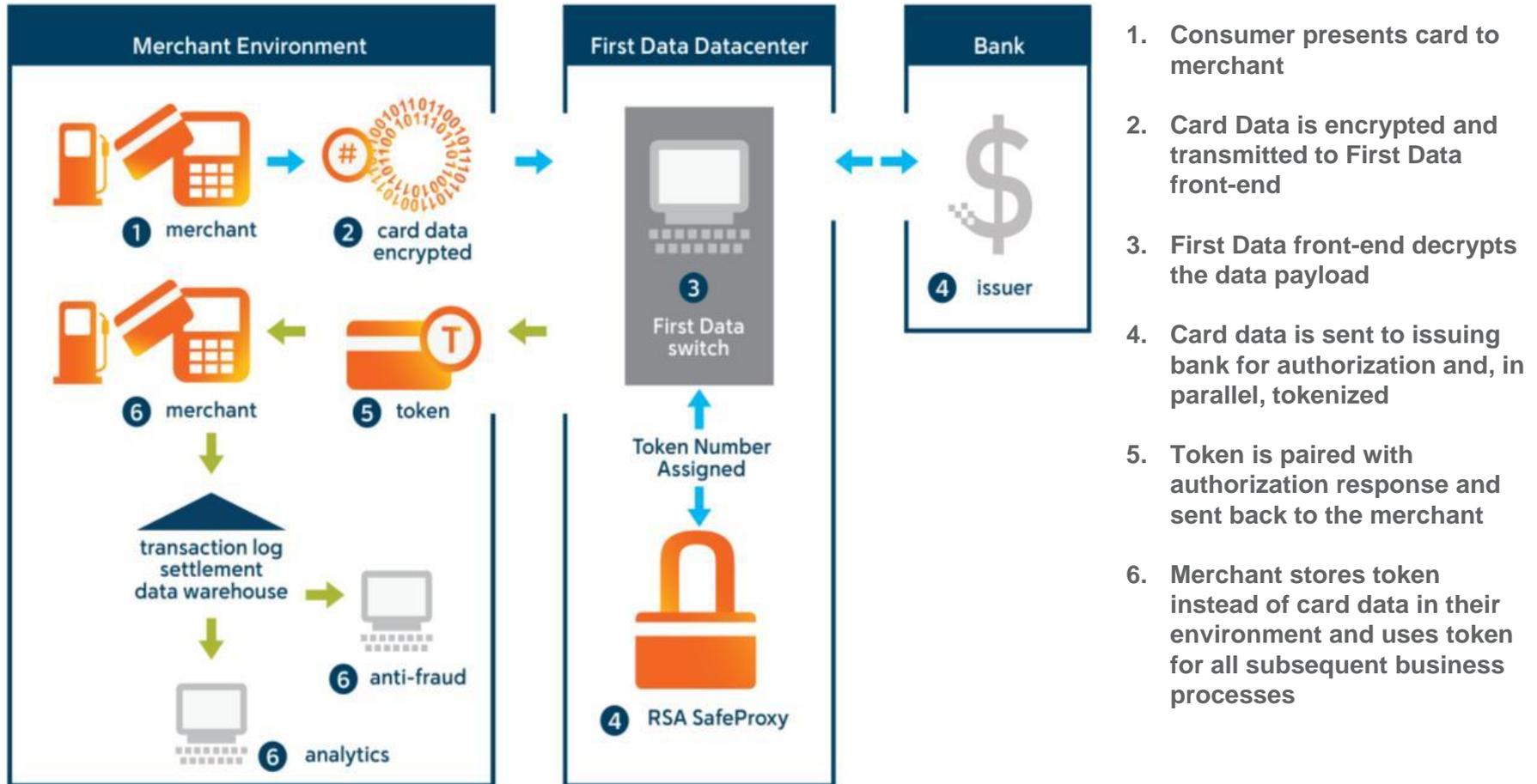
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THE PUZZLE
OF PAYMENTS SECURITY:

*Fitting the Pieces Together
to Protect the Retail Payments System*

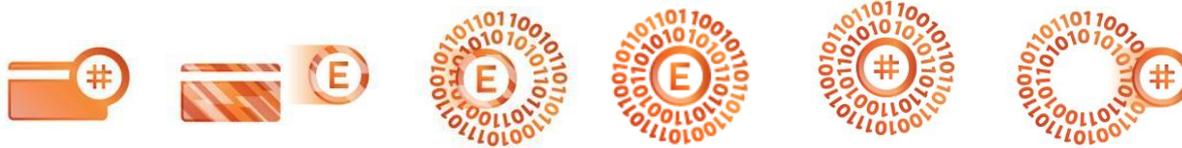
How Do You Devalue Cardholder Data?



Encryption

Protecting Data in Motion

- Encryption conceals data through the application of an algorithm and a secret key
- Encryption is reversible, repeatable or both
- There are two types of encryption:
 - Asymmetric or Software-based (public key)
 - Symmetric or Hardware-based (shared key)
- Each type encrypts different data



Tokenization Technology

Protects data at rest and in use

- Tokenization is a form of data substitution that replaces sensitive payment card values with non-sensitive token, or random-number, values post-authorization
- Differs from encryption:
 - Tokens have no direct relationship with the data they replace
 - Can be stored in the card data environment in lieu of the PAN
 - Non-reversible
 - Can be used more than once to support recurring transactions
- **Support for two distinct types of tokens**
 1. Single Use Tokens
 2. Multi-Pay Tokens

