CMPT 373
Software Development Methods

Designing Secure Software

Nick Sumner
wsumner@sfu.ca

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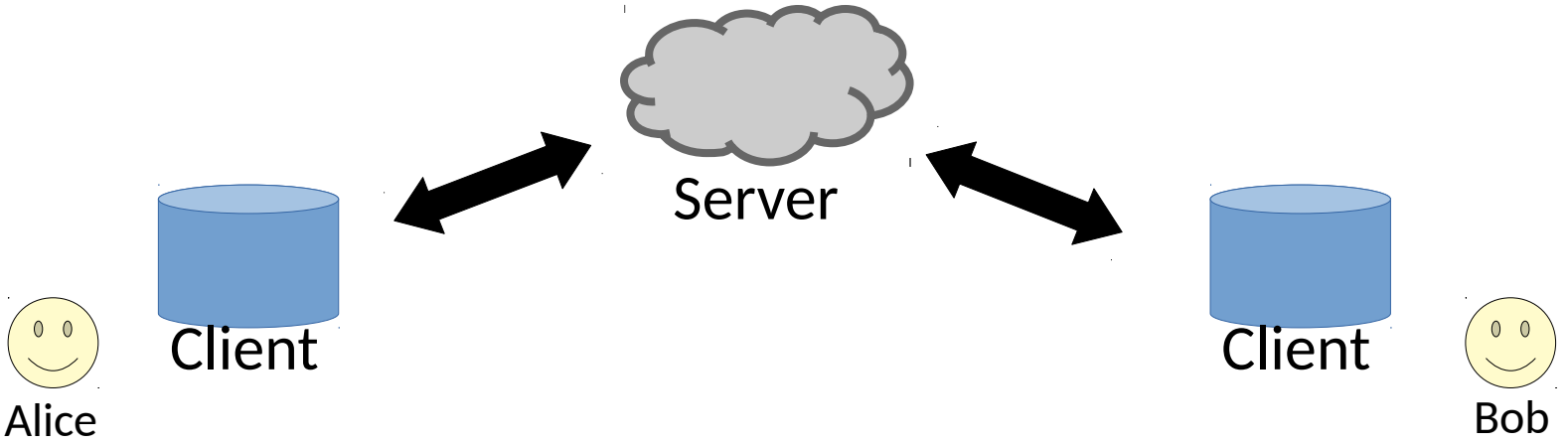

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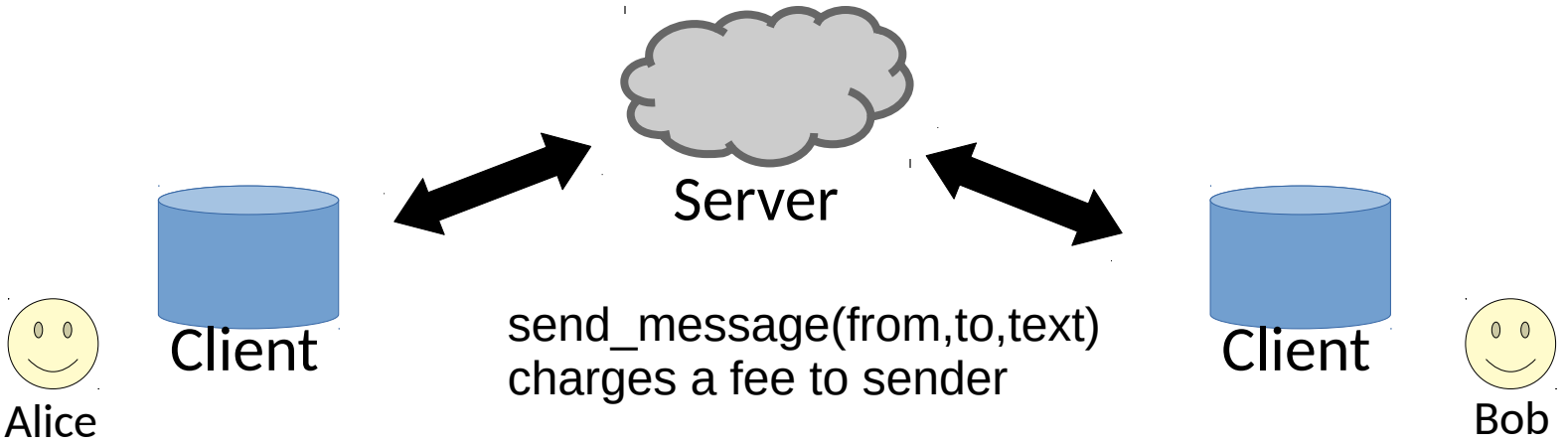

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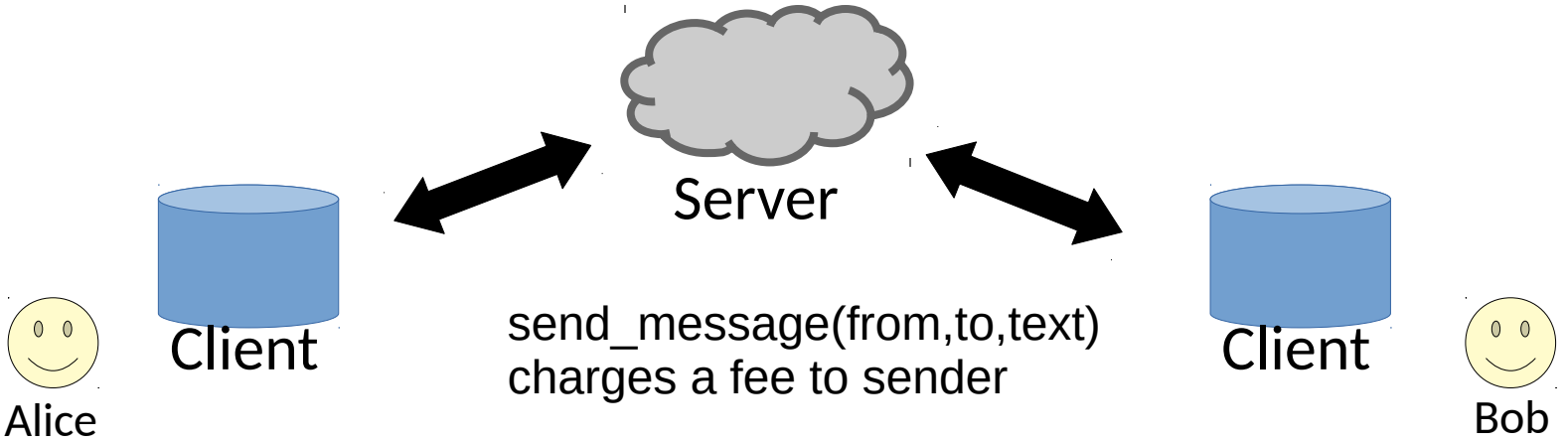

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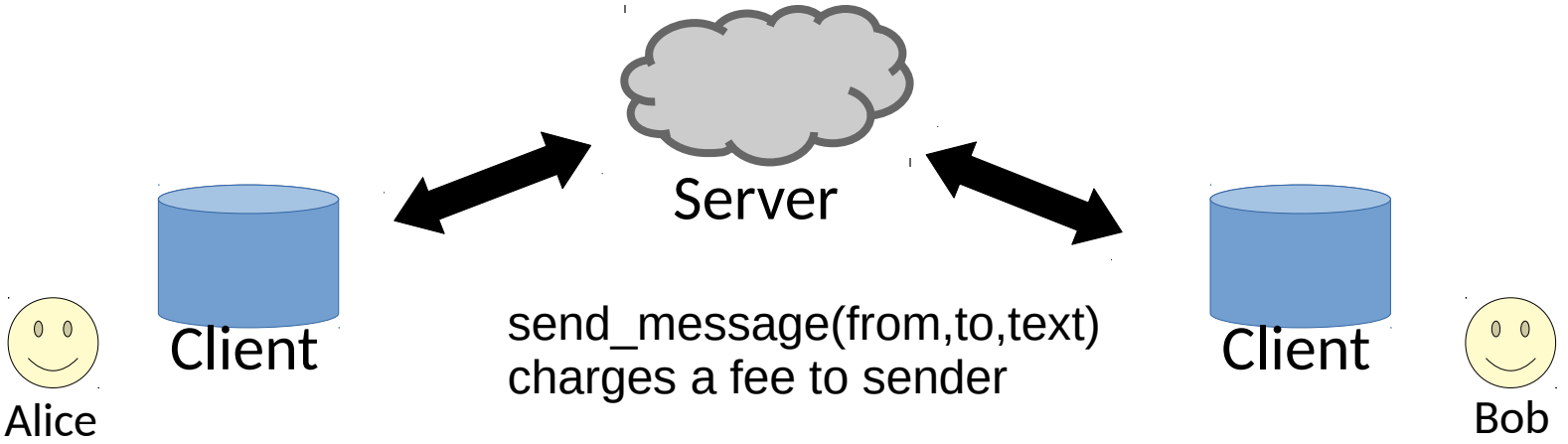

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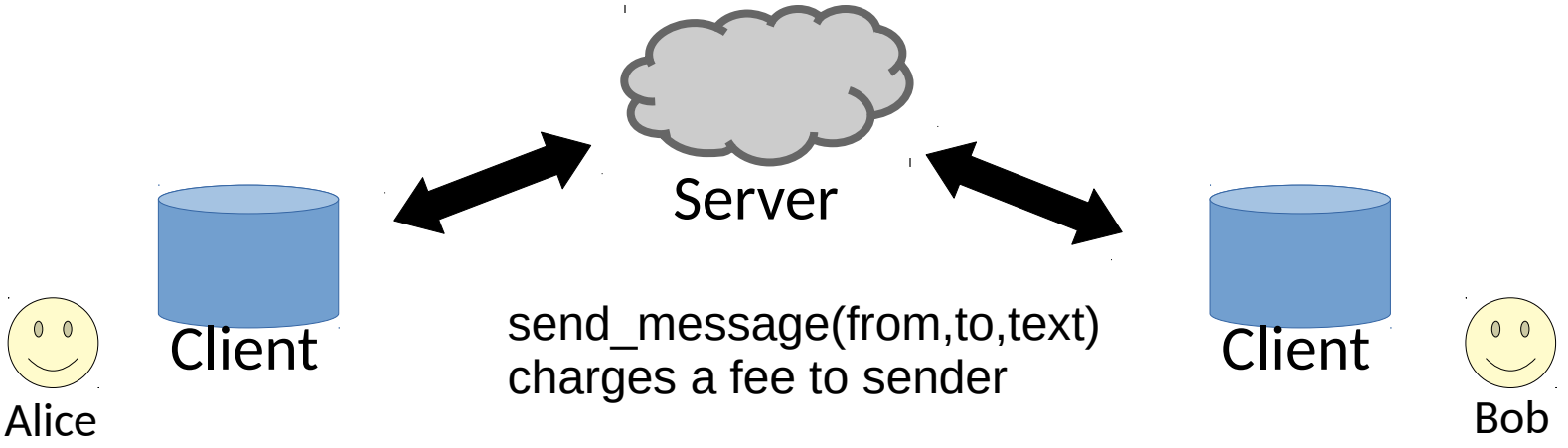

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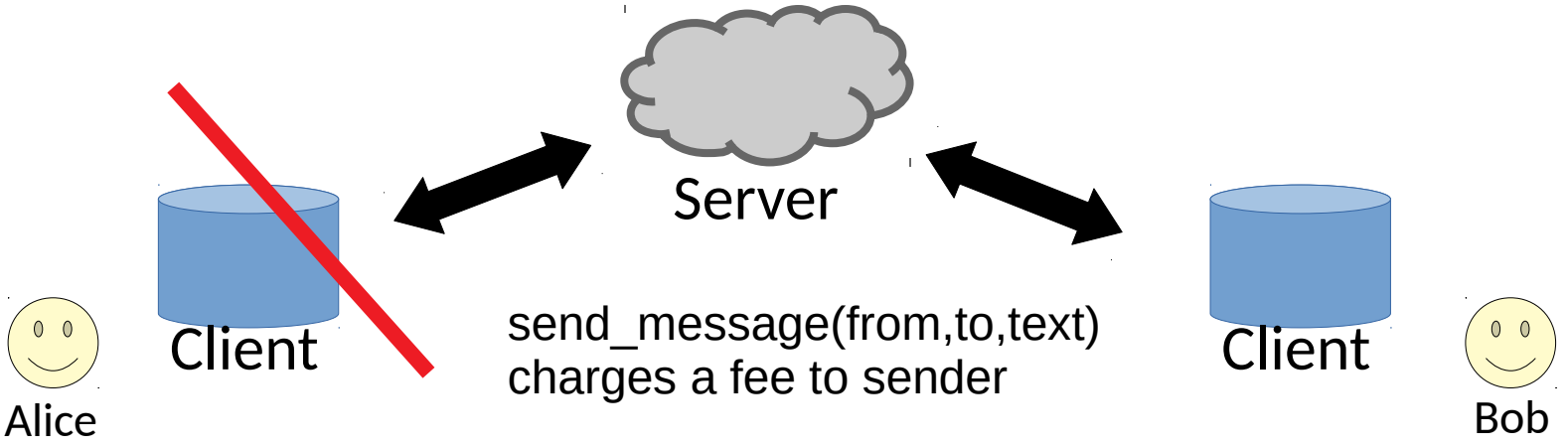

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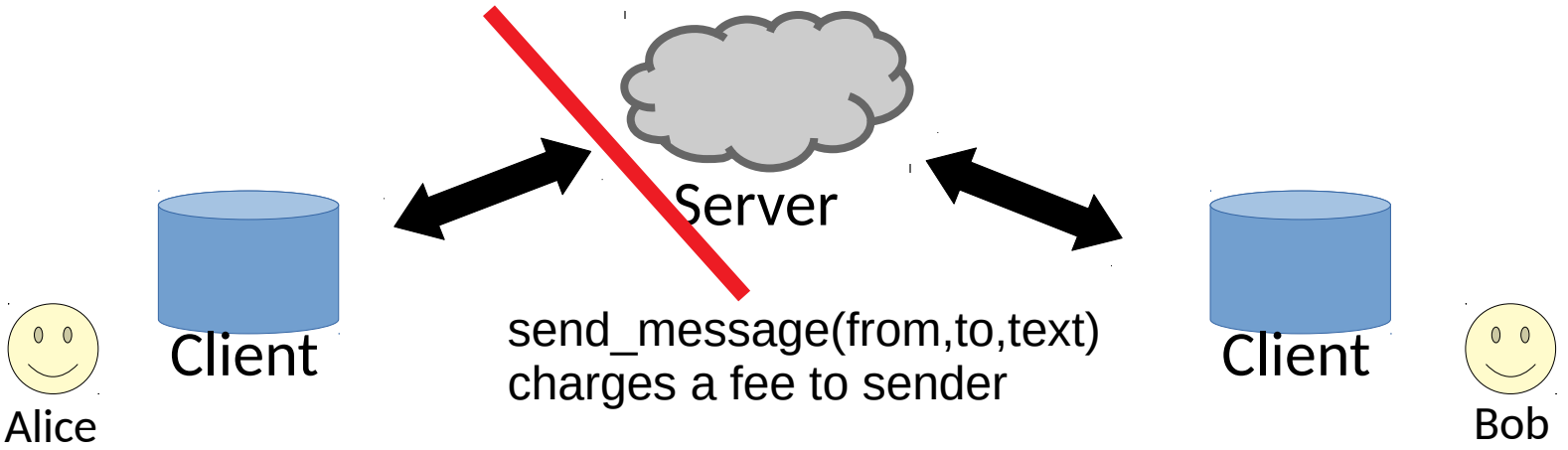

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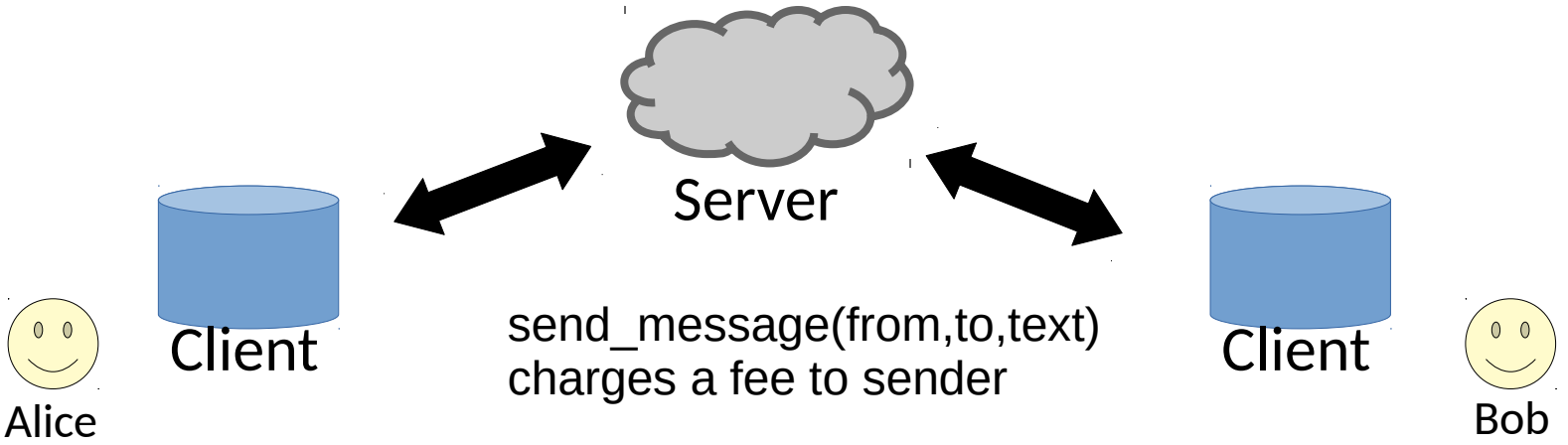

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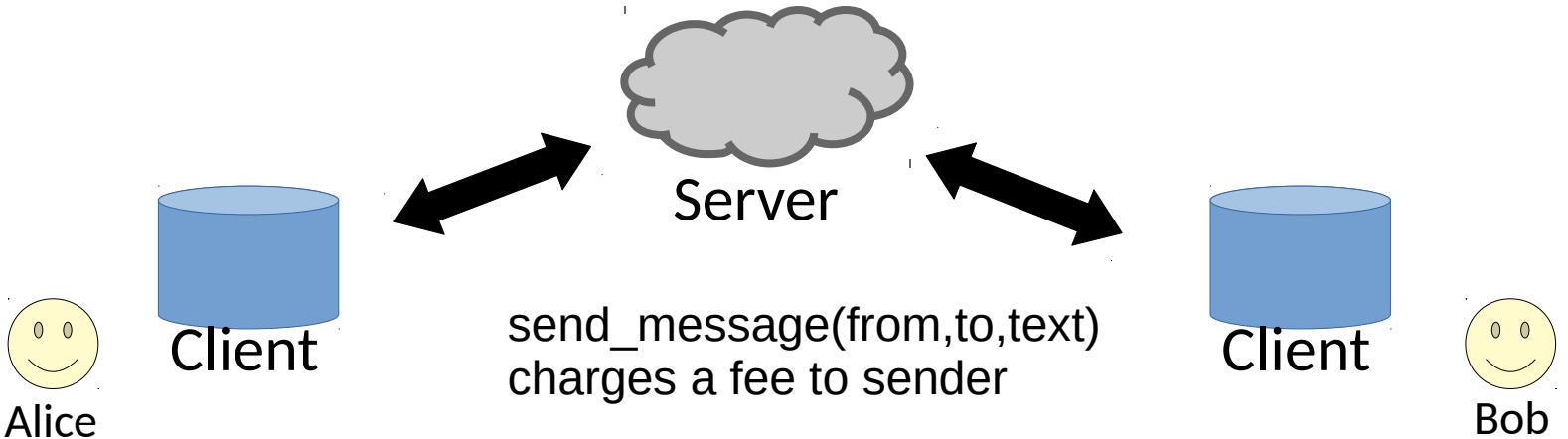

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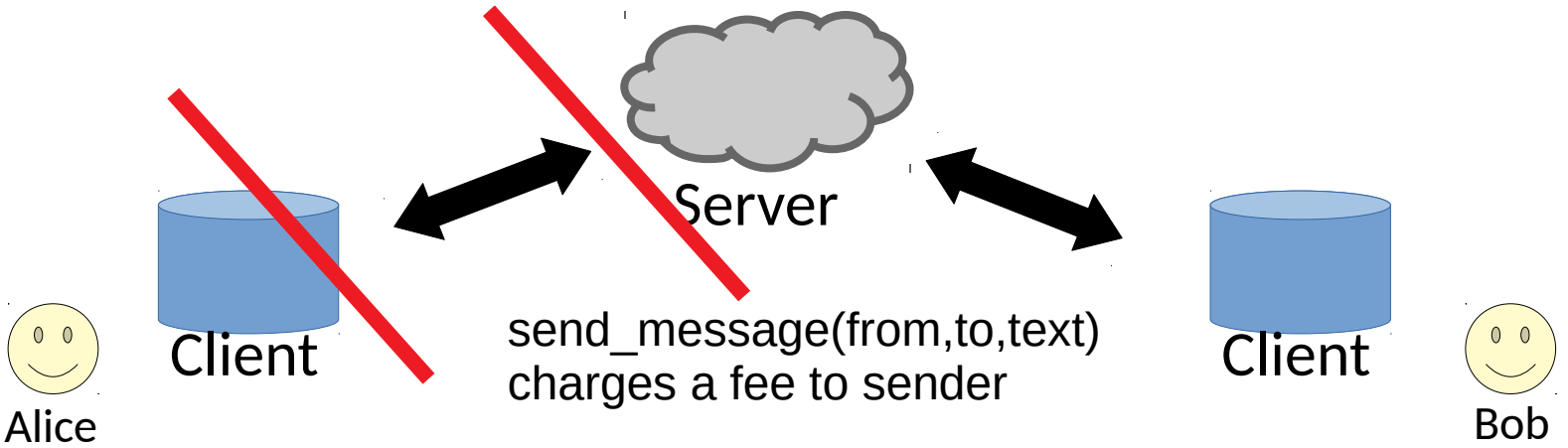

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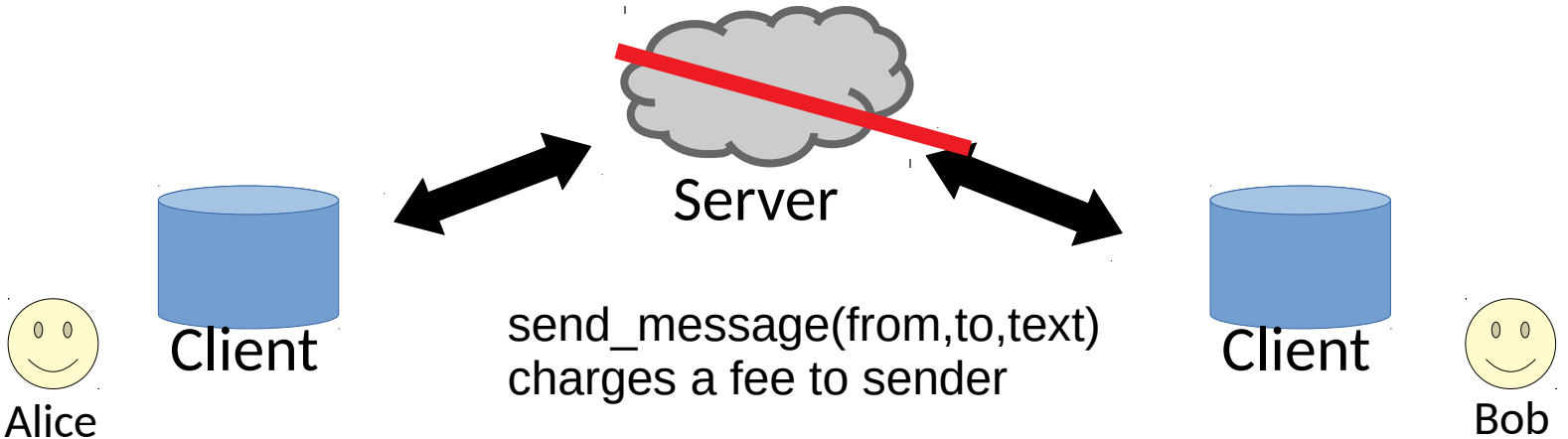

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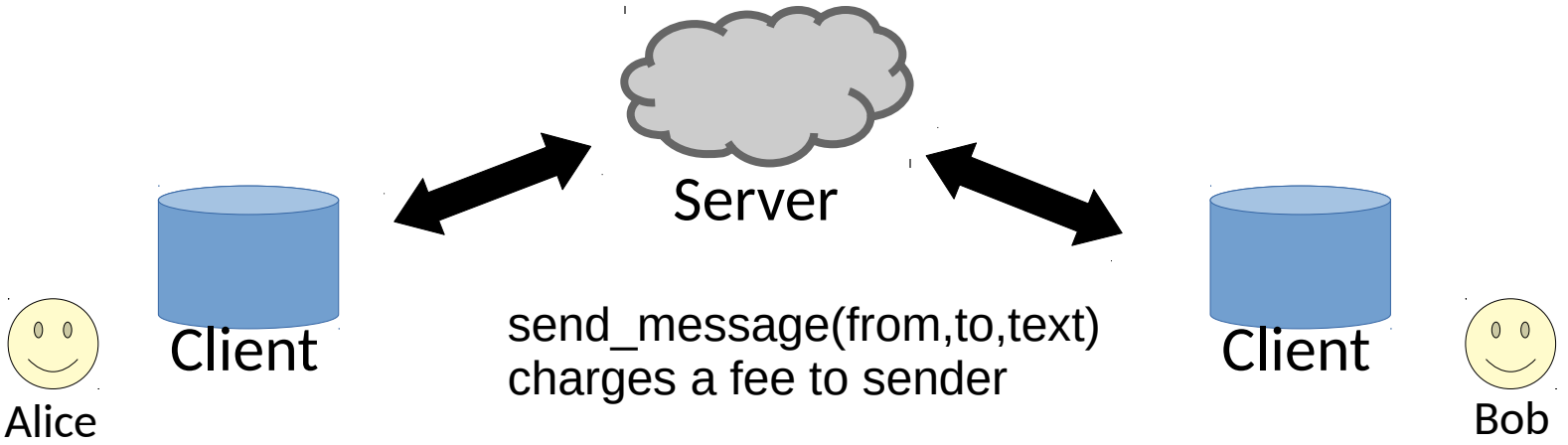

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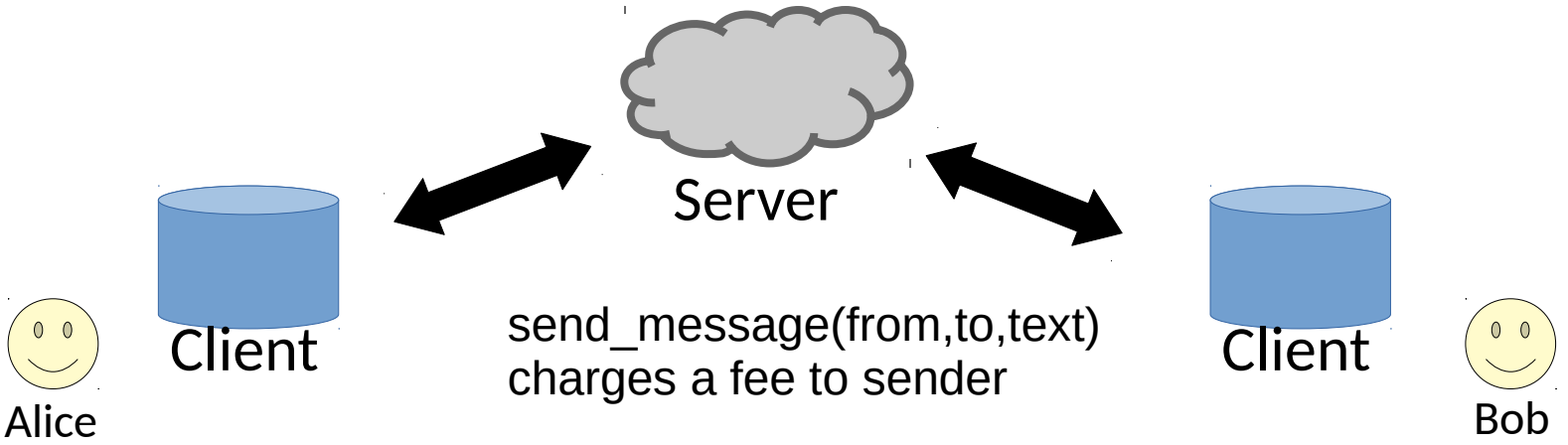

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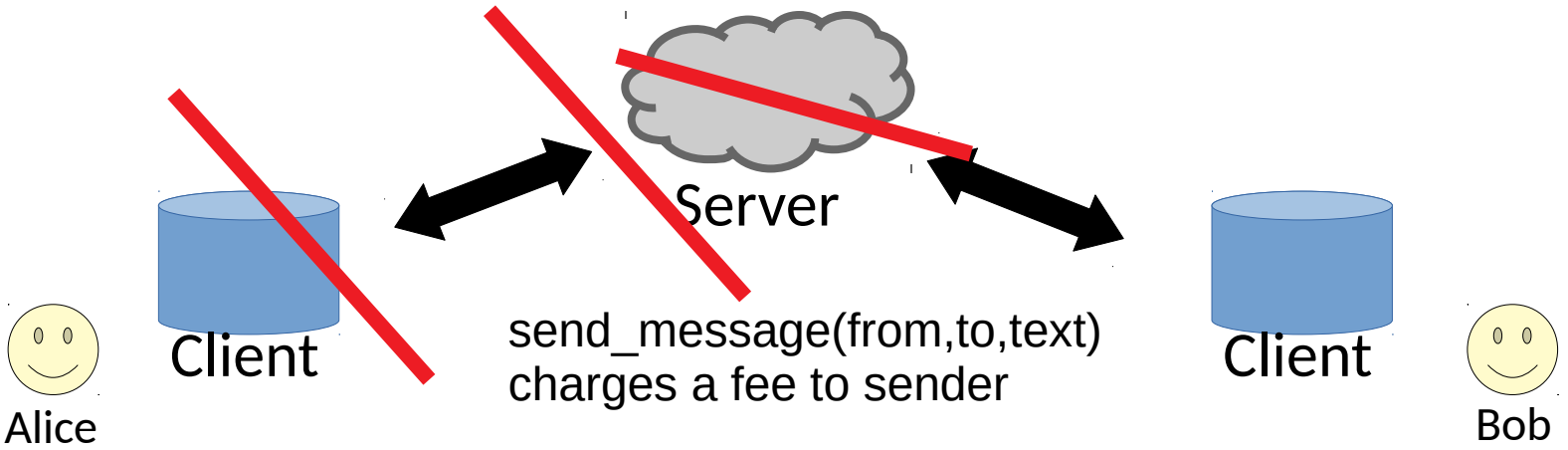

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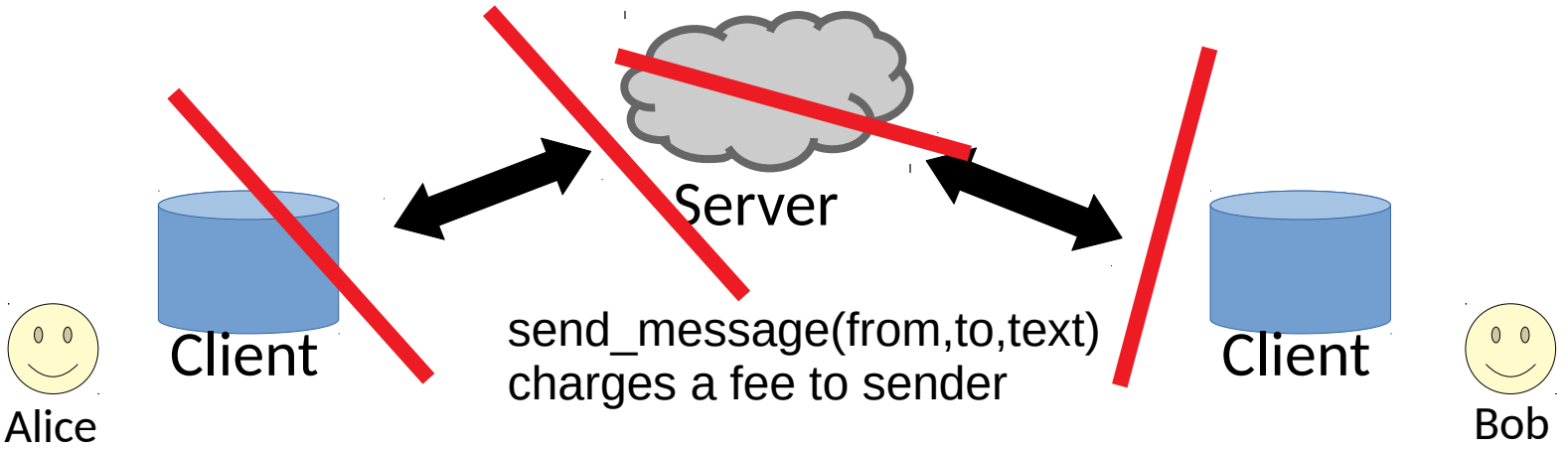

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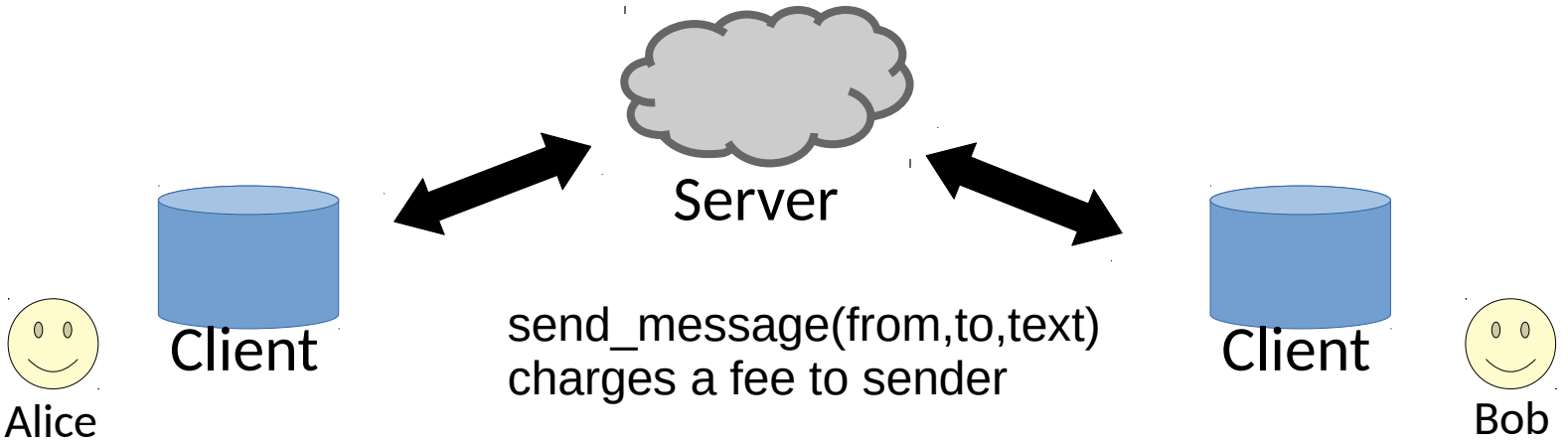

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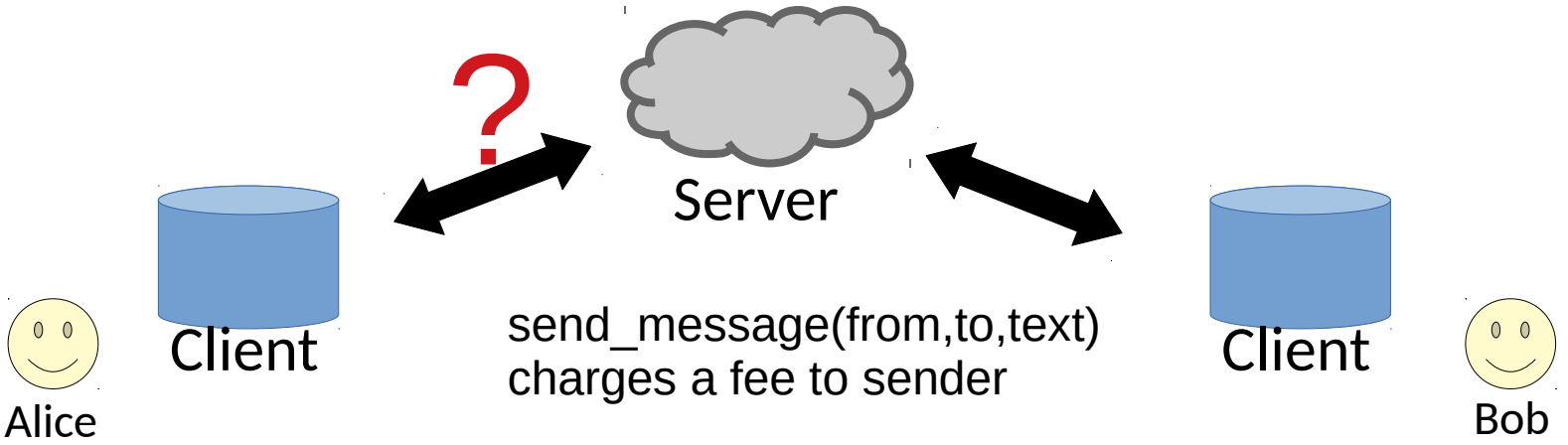

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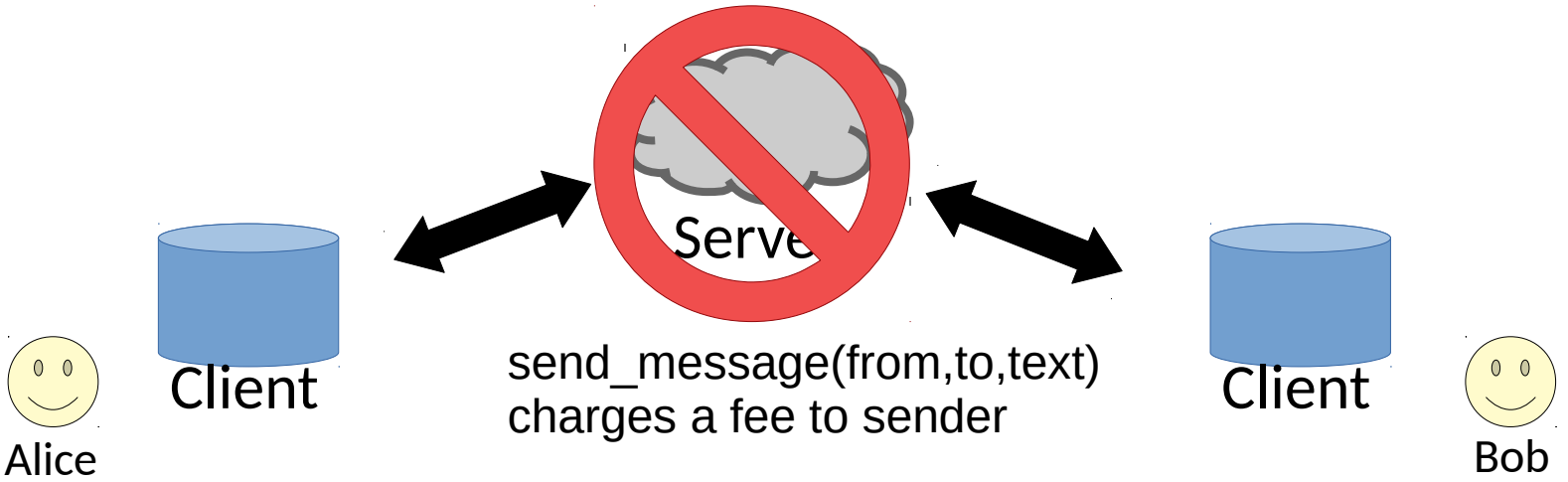

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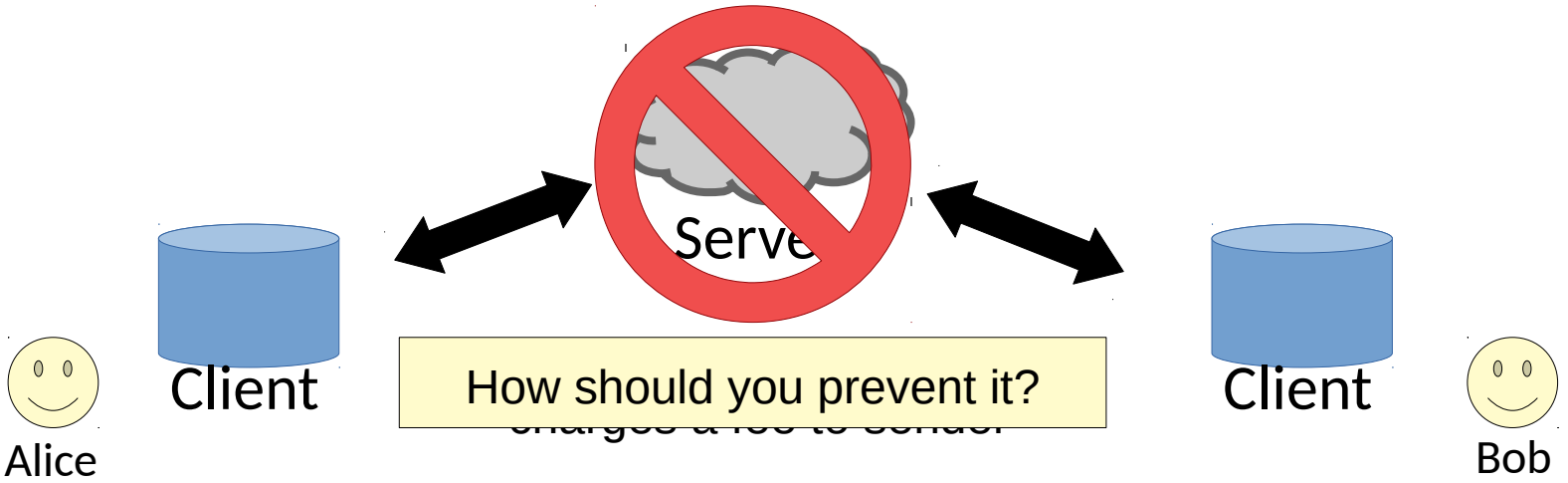

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- An explicit threat model focuses attention

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  - e.g. STRIDE:
    Spoofing, Tampering, Repudiation, Information Disclosure, DOS, Elevate privilege

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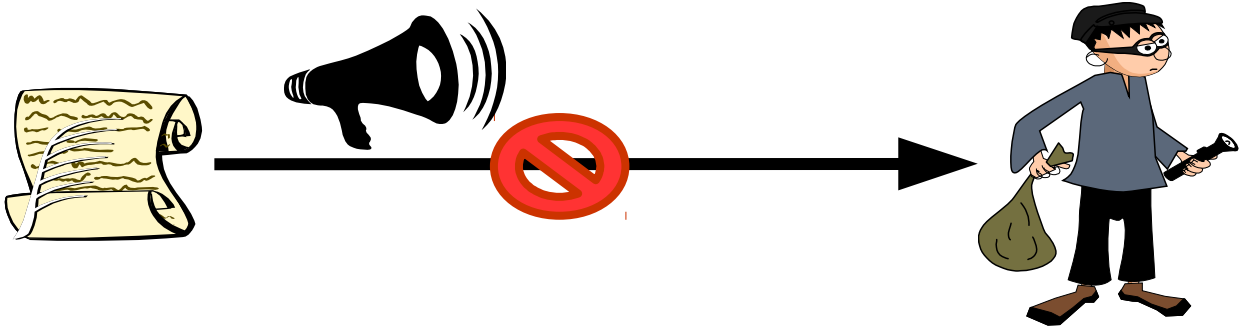

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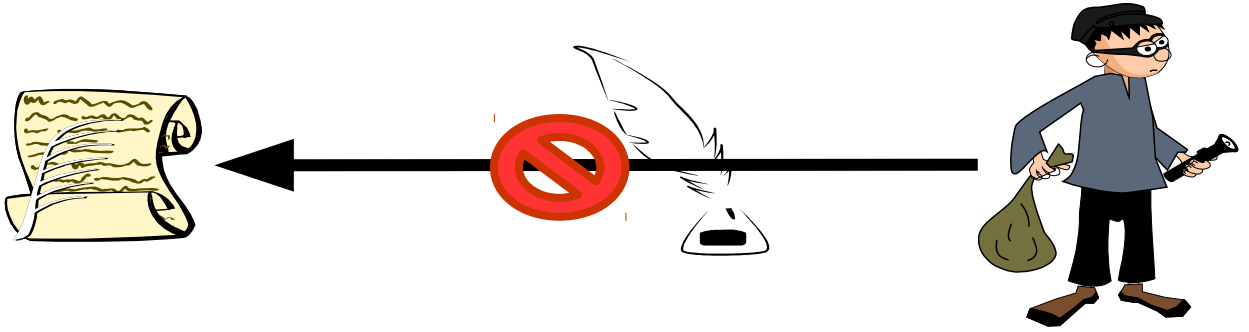

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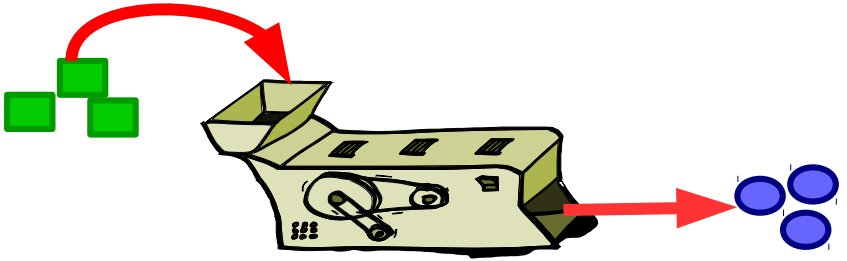

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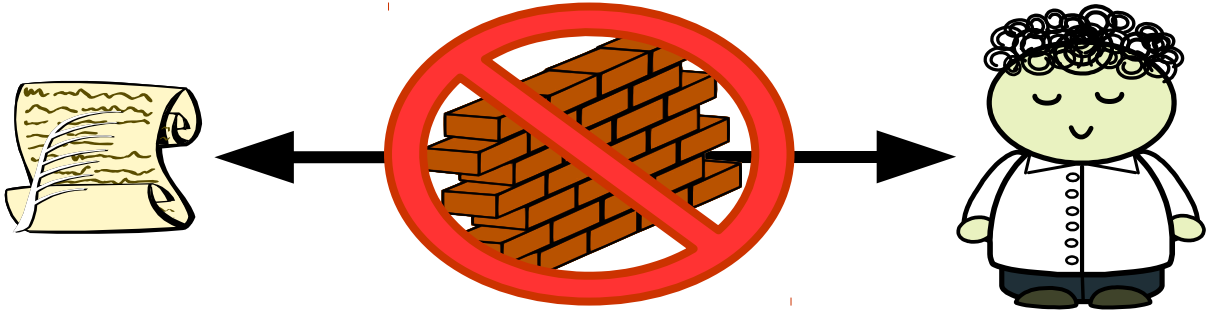

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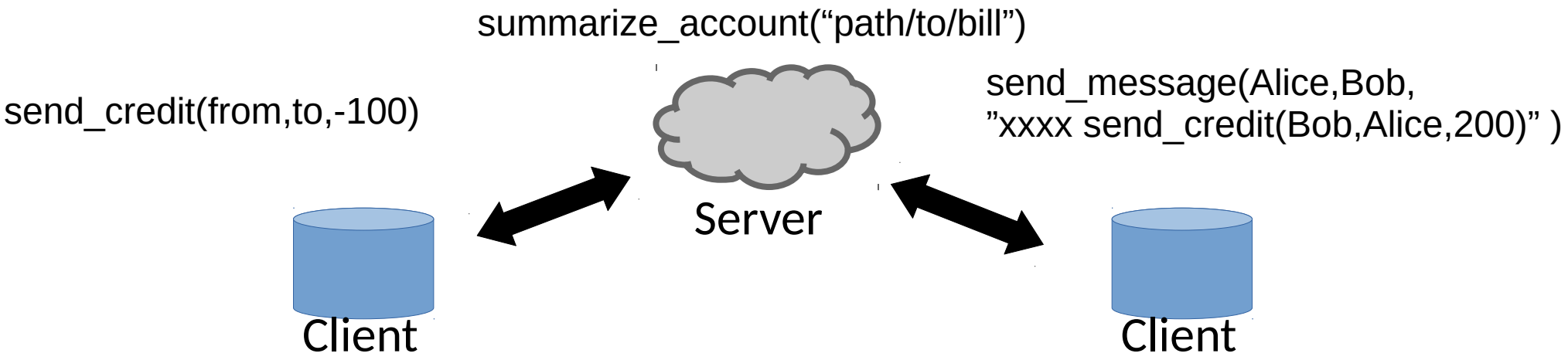

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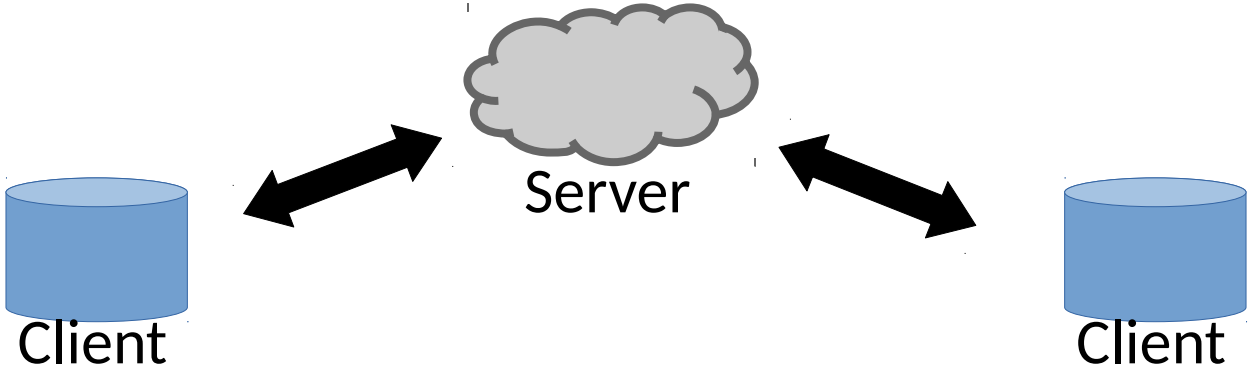

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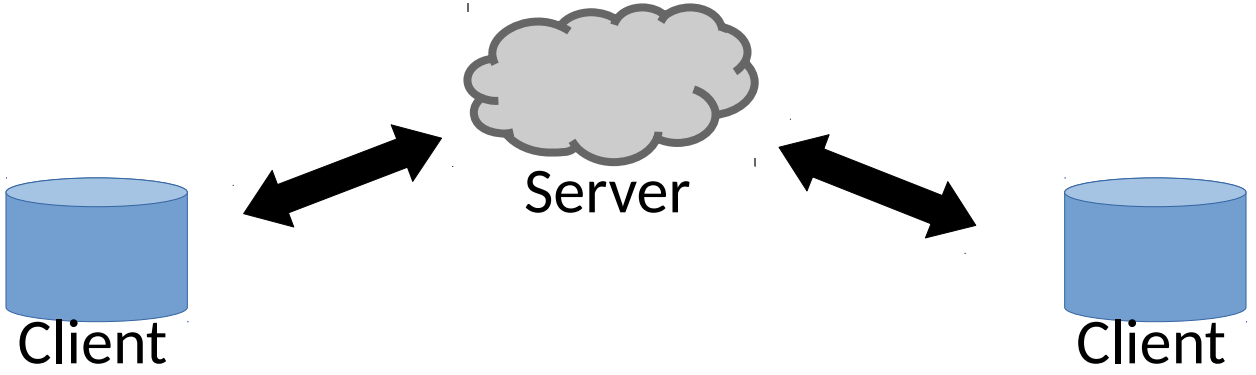

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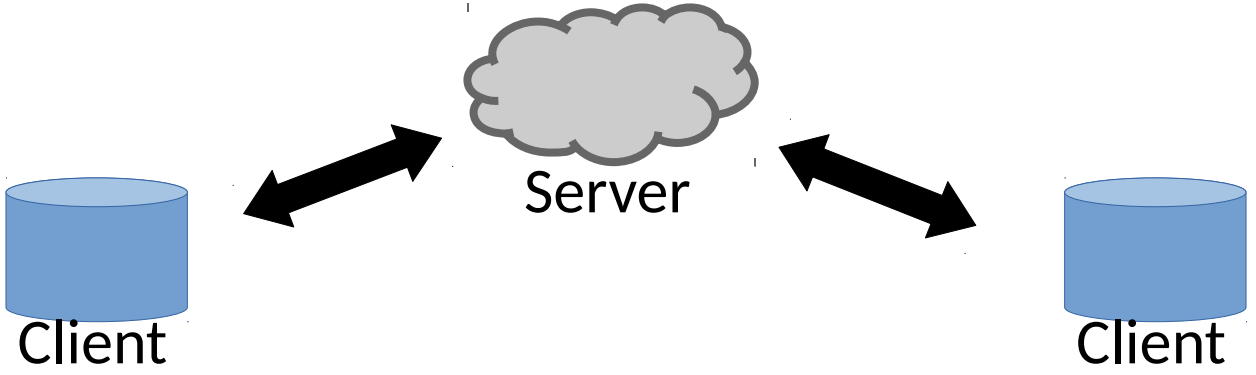

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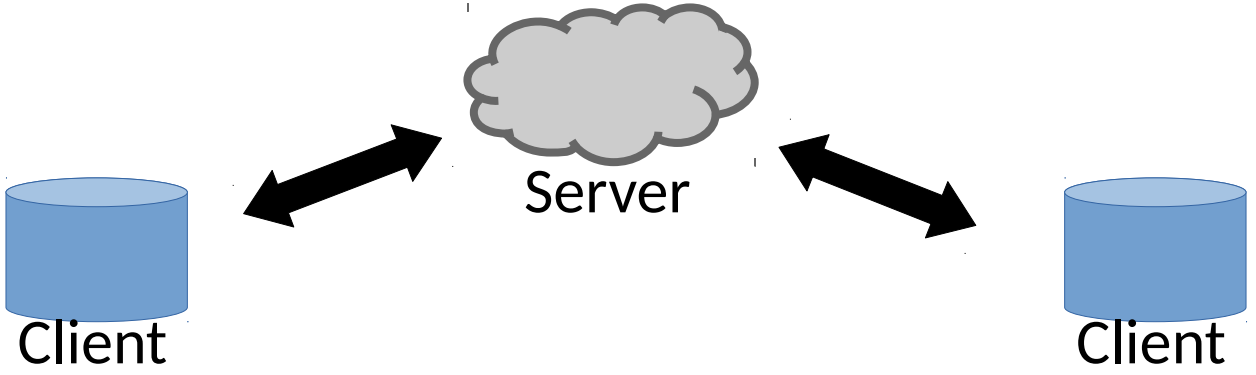

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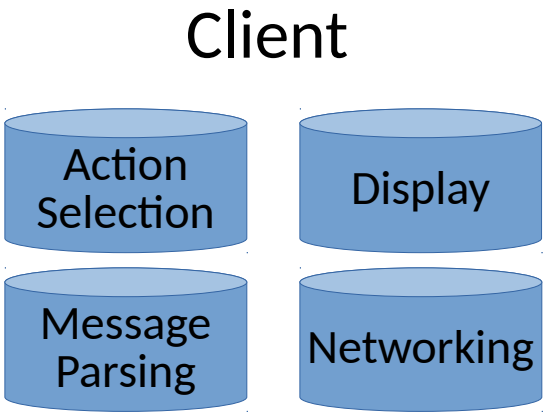

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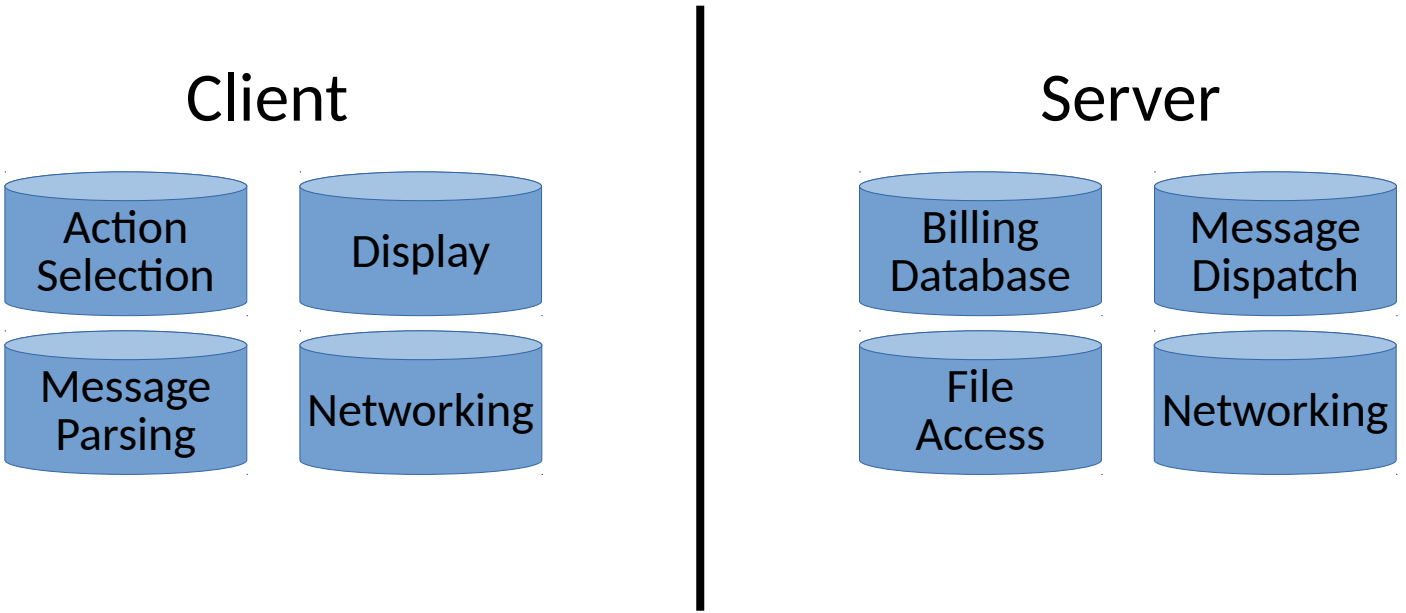

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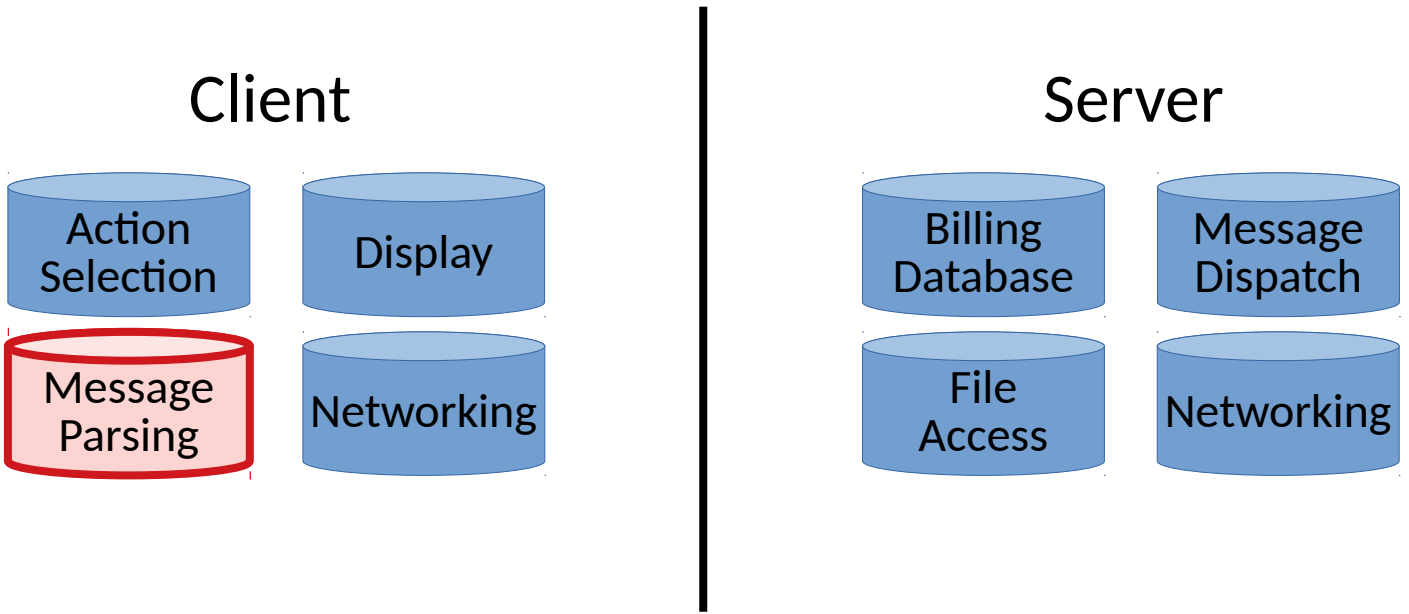

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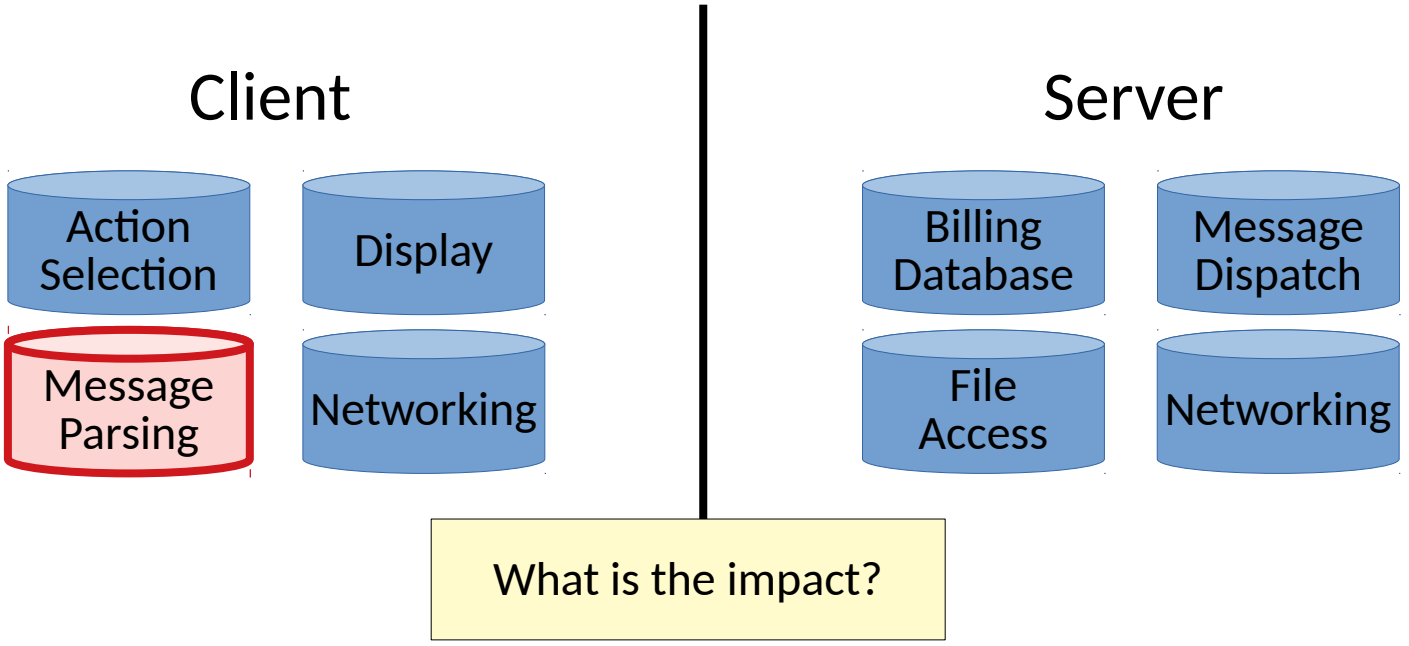

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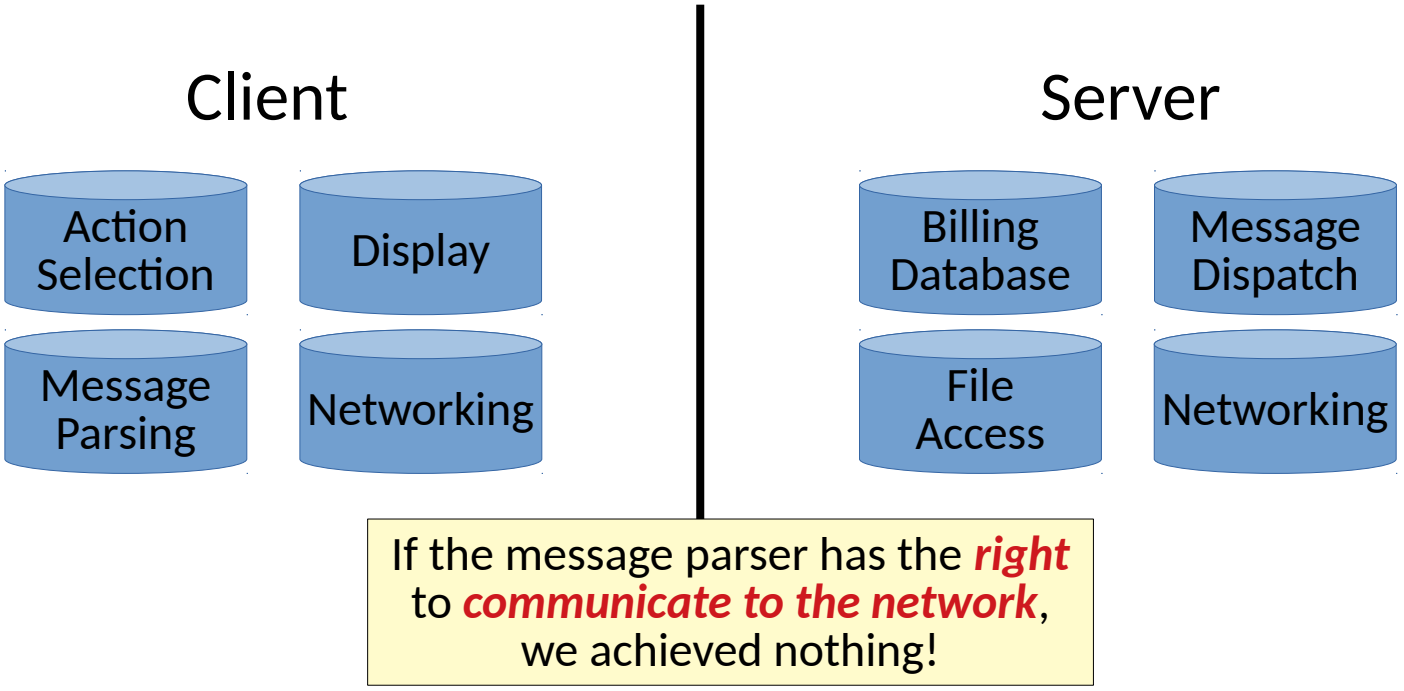

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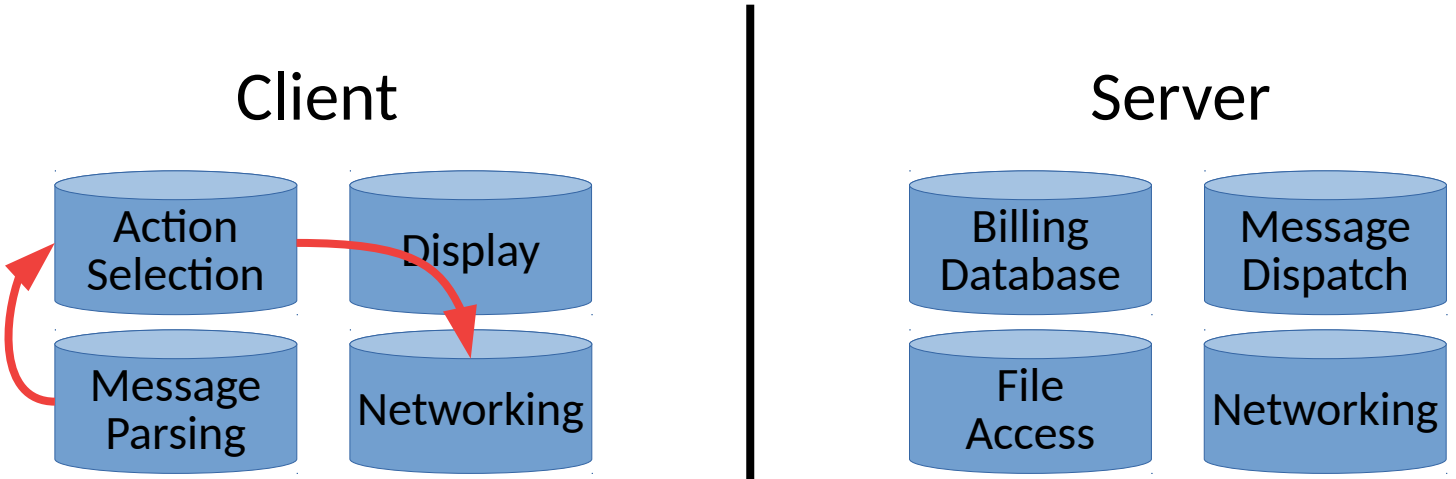

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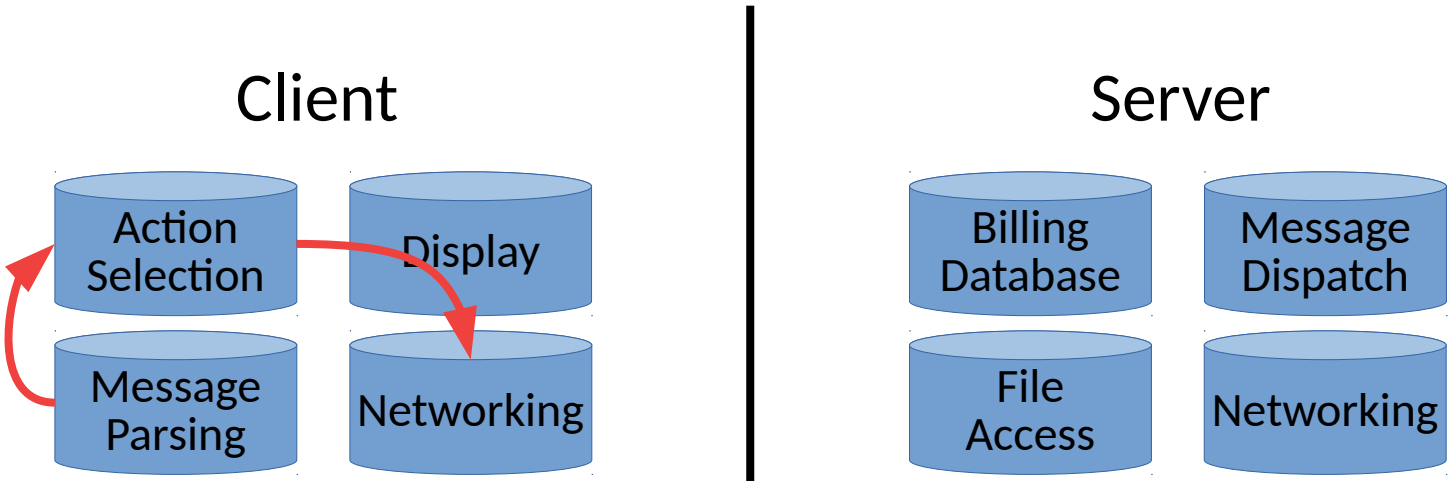

If the message parser has the ***right*** to ***communicate to the network***, we achieved nothing!

Use capabilities, pledges, … to sandbox & limit rights

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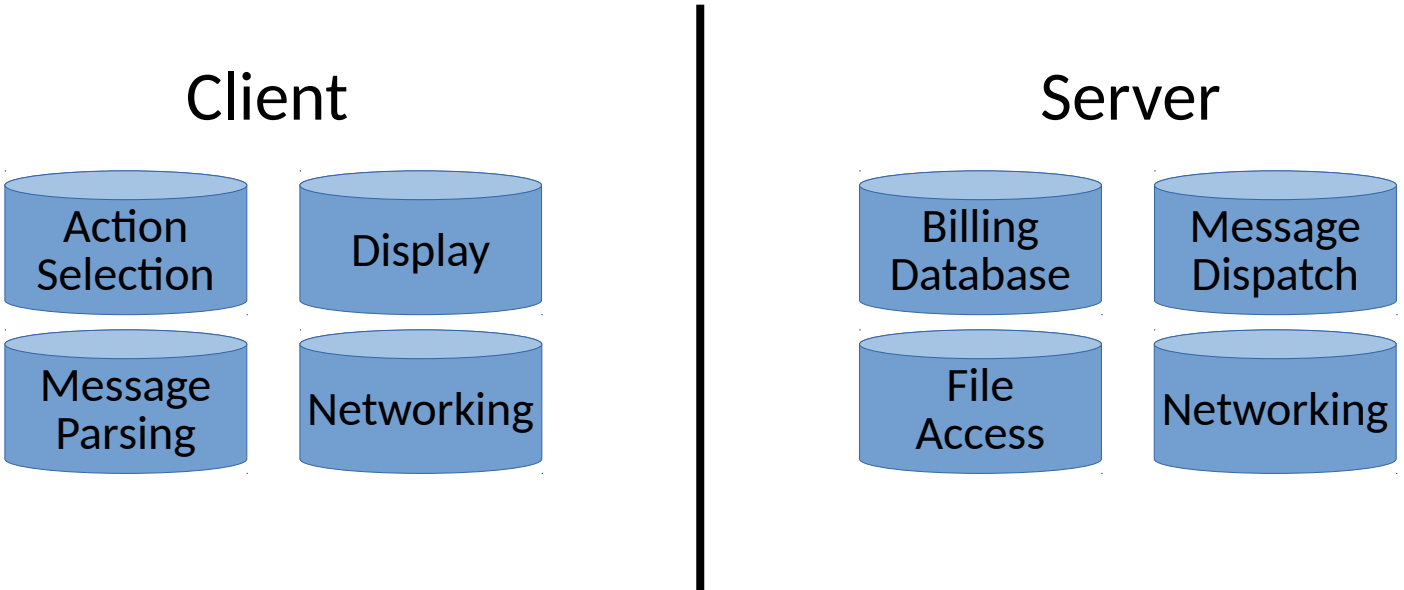

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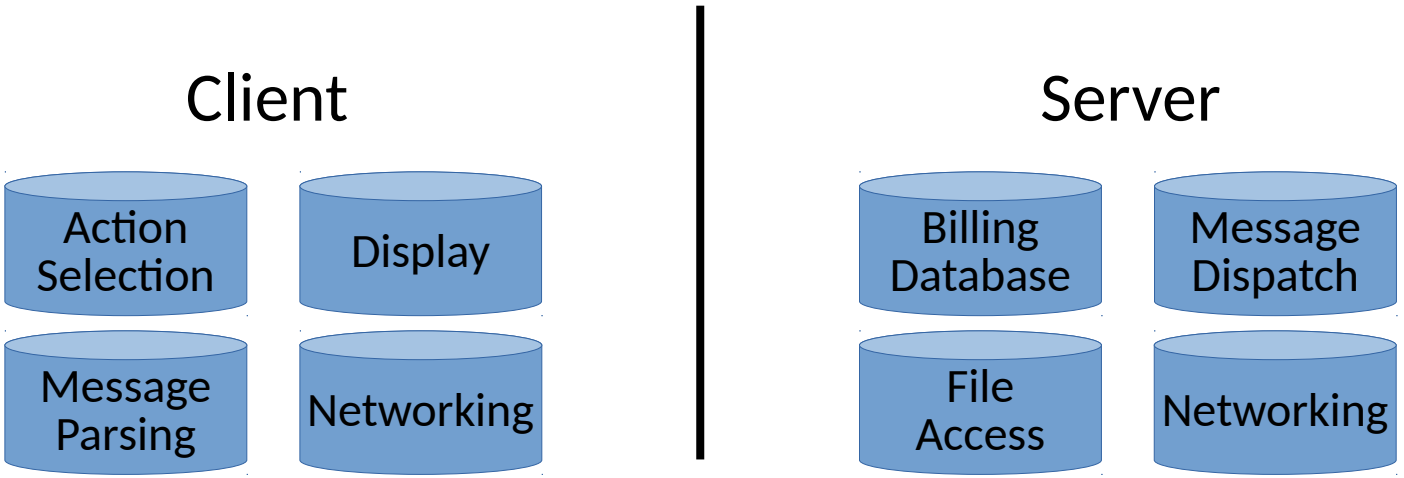
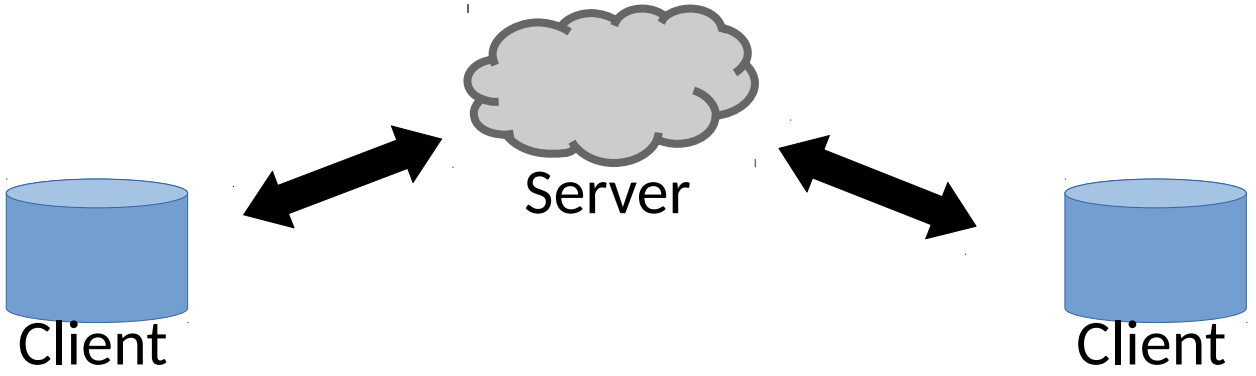
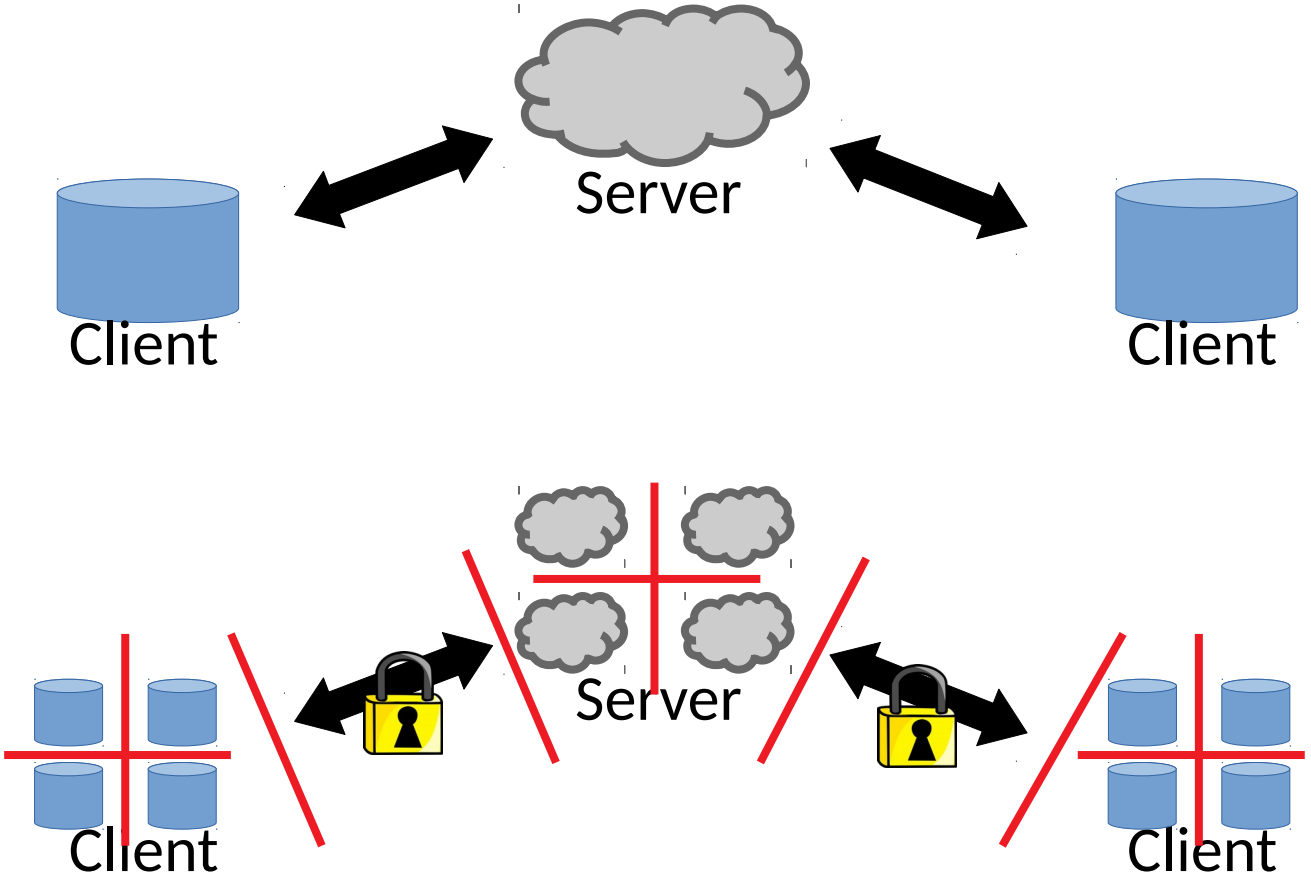


- This approach to sandboxing responsibilities is also employed
  - Browsers
  - Android
  - …

Stepping back



Stepping back



Stepping back