

# Diameter Overload

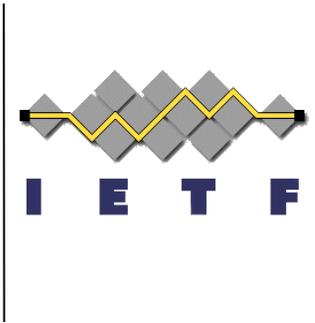
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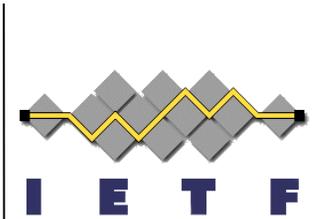
July, 2013





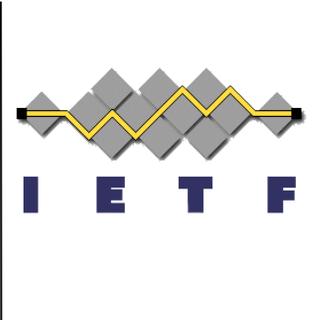
# Starting Point

- `DIAMETER_TOO_BUSY` provides little guidance on what a Diameter client should do when it receives such an error message.
- How much functionality do we need to add?

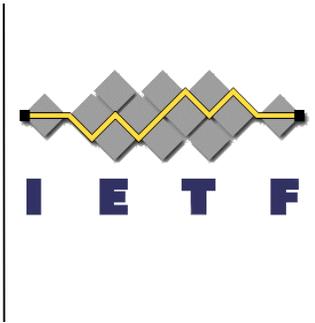


# New Proposal

- Explores different design than [Diameter OVL](#) and [Tekelec solution](#).
- Set of documents:
  - The Diameter Load Balancing Application
    - <http://tools.ietf.org/html/draft-tschofenig-dime-dlba-00>
  - Diameter Overload Architecture and Information Model
    - <http://tools.ietf.org/id/draft-tschofenig-dime-overload-arch-00.txt>
  - Diameter Overload Piggybacking
    - <http://tools.ietf.org/html/draft-tschofenig-dime-overload-piggybacking-00>

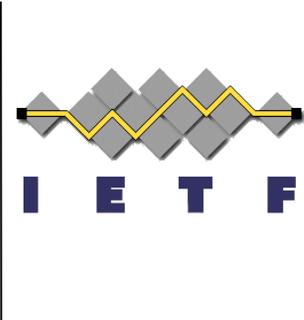


~~Complexity~~



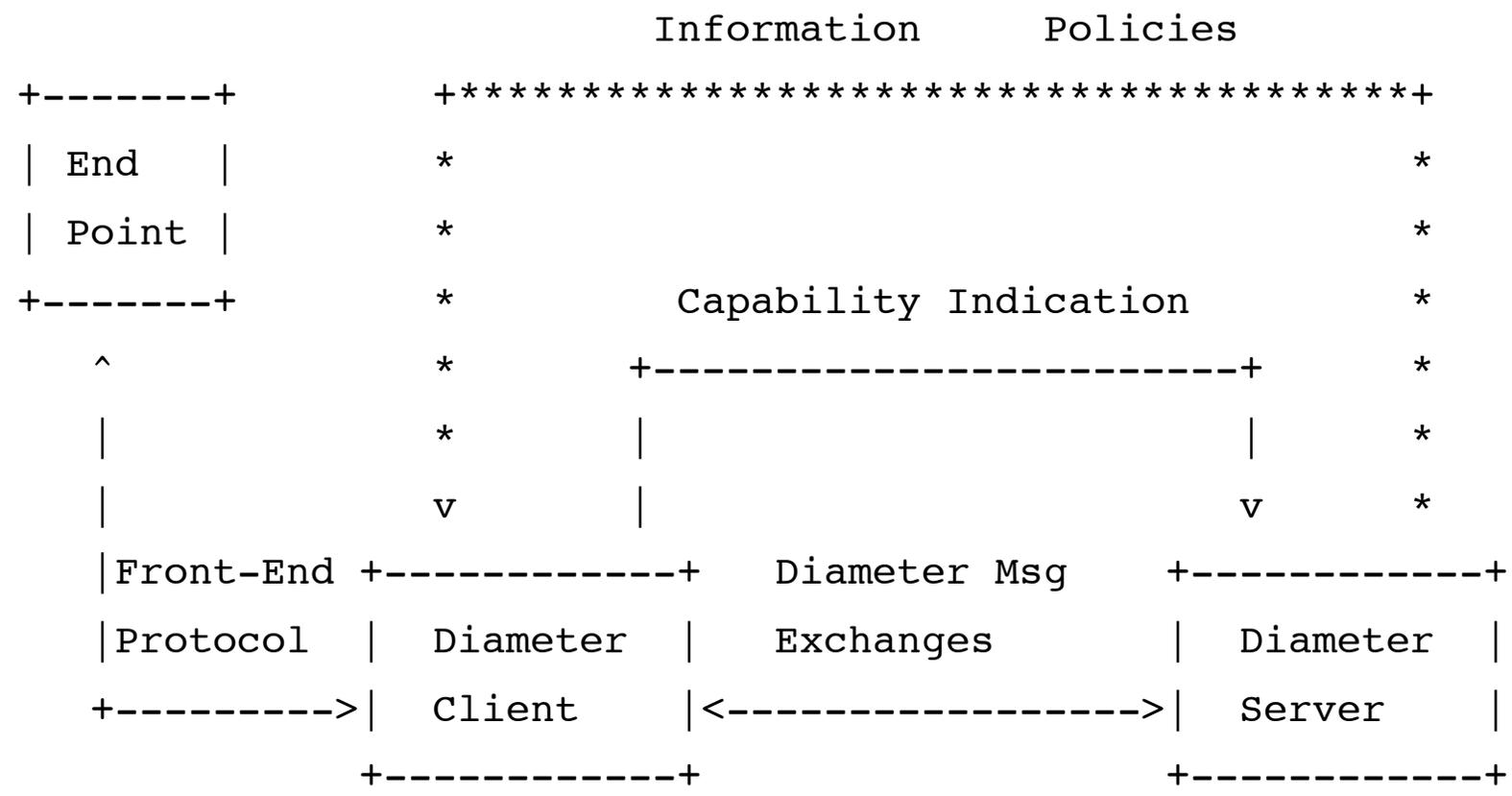
# Principles

1. Avoid premature optimizations
2. Focus on real-world problems
3. Overload conditions are rare events
4. Consider advances in information technology
5. Load balancing and rejecting requests (for overload) is different.
6. Delegation rejection policies create a lot of complexity.

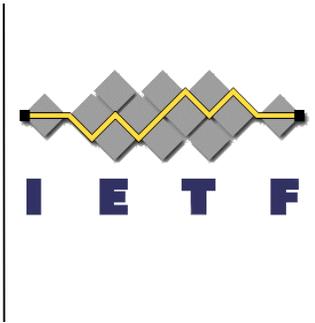


# Overload Signal

Overload + Rejection







# Information Model

- Overload
  - How long is the overload period expected to last?
  - How much should the sending rate be reduced?
  - To what does the rejection policy refer to?
- Load
  - Information about the load situation of a server.
  - To what resource does it refer it?

Additionally needed: capability negotiation

# Overload Communication Basic Design Options

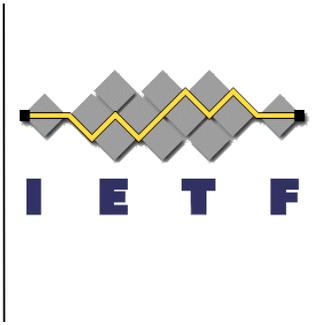


1. Piggyback payloads on applicable Diameter application layer messages
2. Communicated with separate Diameter applications
3. Piggyback in any Diameter message

# Getting Implementation Experience



- Running code would help us to verify specification ideas.
- Software architecture matters for how to communicate load and overload information.
- Examples:
  - Single-threaded architecture (e.g., freeDiameter)
  - Multi-threaded architecture (e.g., freeRADIUS, Apache)
- Example question to investigate: Is input queue a good measure for load?



## Next Steps

- Explore implementation specific aspects in more detail.
- Detailed examples.