

# Requirements for OPES Callout Protocols

based on  
draft-dracinschi-opes-callout-requirements-00.txt

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# What is a callout protocol and why does OPES need one?

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- Not all OPES services should be hosted and executed on OPES intermediaries
  - Processing-intensive services (e.g. virus scanning)
  - Distributed services
  - Proprietary services
  - Services with special security requirements
  - etc.
- A remote callout server hosts and executes OPES service modules and cooperates with one or more in-path OPES intermediaries
- A callout protocol is needed to efficiently forward content-path messages (or parts thereof) from intermediaries to OPES services running on callout servers in an RPC-style manner

# Draft Based on Some Assumptions



- Callout protocol relies on lower-layer protocols for mechanisms like congestion control, reliability, error correction etc.
- Callout protocol follows request/response communication scheme
  - A callout request must always be followed by a callout response
- Callout communication between intermediaries and callout servers is done over persistent connections
- The implementation of callout response caching on the OPES intermediary is beyond the scope of the callout protocol
- Tracing requirements as outlined in the IAB OPES considerations were not considered in the draft

# Derived Callout Protocol Requirements



- Payload transparency
  - A callout protocol should not make any assumptions about the content path protocol
- Message Context
  - Needed to transport meta data to the callout server, e.g. what type of content-path message is encapsulated etc.
- Pipelining
  - Callout protocol should be capable of issuing a request before the response to a previous request has been received
- Message Segmentation
  - Essential in cases where the size of content-path messages is not known in advance
- Service Parameter Negotiation
  - Callout protocol should allow for some sort of service parameter negotiation without a significant increase in overhead

# Derived Callout Protocol Requirements (cont.)



- Message buffering on the intermediary
  - Callout protocol should support a scenario in which the callout server can choose not to return a content path message if it has not been modified
- Preview
  - Callout protocol should allow a callout server to bail out of a callout transaction if it determines early on that no modifications on the encapsulated content path message are required
- Partial content-path messages
  - Callout protocol should support operations on parts of content path messages
- Support for multiple service executions
  - Callout protocol should support the execution of multiple OPES services during a single callout transaction

# Conclusions



- Existing requirements draft was influenced by previous work on existing callout protocols like ICAP
  - Existing requirements draft makes assumptions that have to be re-evaluated
  - Existing requirements draft does not consider IAB OPES considerations
- Existing draft should not be put on WG track as is, but rather serve as input for a new WG callout protocol requirements document