Extended Error
Conclusions and Non-Conclusions from WGLC #2

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Overview

- Conclusions that don’t need help
Overview

- Conclusions that don’t need help
- Conclusions that weren’t conclusions
Registry changes

▶ Only one issue was easily resolved
▶ Registry ranges simplified to:

0 - 49151  First come, first served
49152 - 65280  Private use
DNS UDP overflow

- Overflow happens all the time (e.g. glue)
- Normally the TC bit signals overflow
  - Some important information was excluded
  - Hint to resolver hinted to retry over TCP
EDE overflow

- EDE can cause overflow too *(of course)*
  - But: more important info shouldn’t be dropped!
  - Therefore: EDE options should be dropped first
  - Set the TC bit?
EDE overflow

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  - But: more important info shouldn’t be dropped!
  - Therefore: EDE options should be dropped first
  - Set the TC bit?

- Problems
  - Setting TC seems extreme
    - EDE is only supplimental
  - Retrying over TCP seems extreme
  - The EDE information may be UDP specific!
A New Idea is Floated

- Suggestion from Viktor Dukhovni’s colleague:
  - add a new EDNS0 bit
  - use this instead of the TC bit
  - "non-essential diagnostic information was left out"
Overflow Options

- Don’t specify anything
- Drop EDE first
  - Set the TC bit?
  - Don’t set the TC bit?
  - Create a new bit?
Forwarding Handling

- Multiple LC comments stated:
  - we need to handle forwarding!

- Discussions with multiple people lead to some options
Forwarding Options (1/2)

(All options listed for completeness)

1. Mandate: *no forwarding* of EDE happens
2. Mandate: resolver/forwarders should simply *copy forward*
3. MAY copy and adjust the extra-text field
   - adding additional information
   - e.g., where it came from.
   - (unlikely to be popular)
4. Could add tracing elements to the packet
   4.1 Add a single source by the EDE generating entity
   4.2 Add multiple sources (e.g. traceroute)
   4.3 RECOMMEND adding source indication to extra-info

5. Add a new EDE code for supplemental information:
   ▶ another “multiple source” mechanism
   ▶ IE: this records details of EDEs above it

6. Make the document experimental
   ▶ deal with it after deployment experience

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Adding a source field

0: | OPTION-CODE |
   +---------------------+
2: | OPTION-LENGTH |
   +---------------------+
4: | INFO-CODE |
   +---------------------+
6: | SRC_LENGTH |
   +---------------------+
8: / SRC_FIELD (which can be zero length)    *** NEW *** /
   +---------------------+
10: / EXTRA-TEXT (can be zero length)...
   +---------------------+
SRCFIELD Options

1. NSID
2. hostname (fqdn)
3. ip address
4. URL (eg from doh)
5. ip:port
6. cert subject name
7. ...
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2.4. Presentation Format

User interfaces MUST read and write the contents of the NSID option as a sequence of hexadecimal digits, two digits per payload octet.

The NSID payload is binary data. Any comparison between NSID payloads MUST be a comparison of the raw binary data. Copy operations MUST NOT assume that the raw NSID payload is null-terminated. Any resemblance between raw NSID payload data and any form of text is purely a convenience, and does not change the underlying nature of the payload data.

See Section 3.3 for discussion.