NETCONF Extension for Data Fragmentation

(draft-liu-netconf-fragmentation-00)

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What's the problem?

- The response data might be very big when
  - the NMS is retrieving a large data store (e.g. routes in a core router)
  - data synchronizing between the NETCONF Client and Server
  - etc.
- How do the NETCONF client/server handle the large size response data?

Existing Approaches and Problems

- Stream-Oriented Processing
  - Encapsulating the big response into one <rpc-reply> message
  - streaming it from Server to Client
- Problems
  - lack of mechanism to cancel an ongoing session
  - complexity of implementation in parsing the streamed data

Existing Approaches and Problems

- Subtree/Xpath Filtering
  - only get part of the targeted data
- Problems
  - filtering conditions might be hard to identify
    - E.g., to get routes in a device, filterd by interface? By prefix?
  - filtering result might still big

New Proposed Solutions

- NETCONF <get-block> Extension
  - Described in the draft
  - a fragmentation mechanism in NETCONF layer
- Basic Approaches
  - <get-block> capability negotiation
  - NETCONF Server encapsulates the response data into multiple <rpc-reply> messages (fragments) . Each fragment is limited in a certain amount of size (e.g. 30K)
  - NETCONF Server sends the first fragment and waits the <get-block> instruction from the NETCONF Client to send the next fragment

New Proposed Solutions

- Subtree Iteration
  - raised in the mailing list
- Basic Approaches
  - “Iteration” capability negotiation
  - The targeted data is iterated by subtree
  - The NETCONF Server only replies a certain number of entries (e.g. 50 routes) of a subtree in <rpc-reply> each time

Questions to the WG

- Add the problem to the NETCONF charter?

Next Steps

- Confirm the problem in the WG
- Discuss the proposed solutions
  - detailed technical designs
  - pros & cons of different solutions

Comment?
Thank you!

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