draft-perez-radext-radius-fragmentation

Objective

- Define a mechanism to deal with RADIUS packets over 4 KB, that are possible when:
  - Many different attributes are present
  - Big extended fragmented attributes are present (e.g. SAML-Message)
  - A combination of both
- Avoid using an out-of-band mechanism to retrieve data
  - Use a single trust infrastructure → RADIUS
- Compatible with existing specifications for intra-packet fragmentation
  - i.e. ietf-radext-radius-extensions

Overview

- A RADIUS peer willing to send a > 4KB RADIUS packet will do the following process:

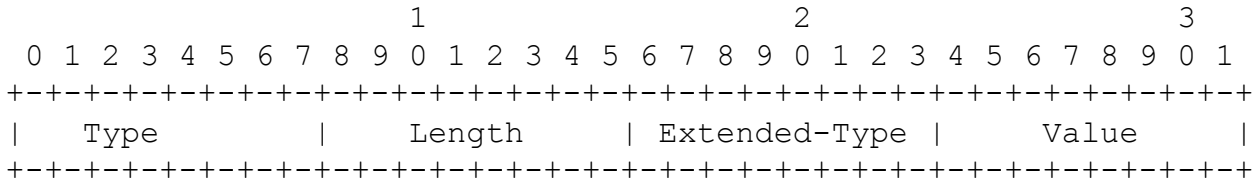
1) Divide the packet into smaller packets (called *chunks)* < 4 KB
   - If the last attribute of a chunk has flag “M” set (ietf-radext-radius-extensions) it is marked with an additional flag “T” to indicate this is not an error

2) A new attribute called *More-Data-Pending* is included in every chunk, except on the last one
   - Indicates that more data is required to rebuild the original packet
   - Equivalent to the flag M, but at a packet-level

3) Send chunks to the receiver **in order**
   - Using *Access-Request/Access-Challenge* exchanges
   - Receiver do not process chunks until the original packet is completely rebuilt

More-Data-Pending

- Format:

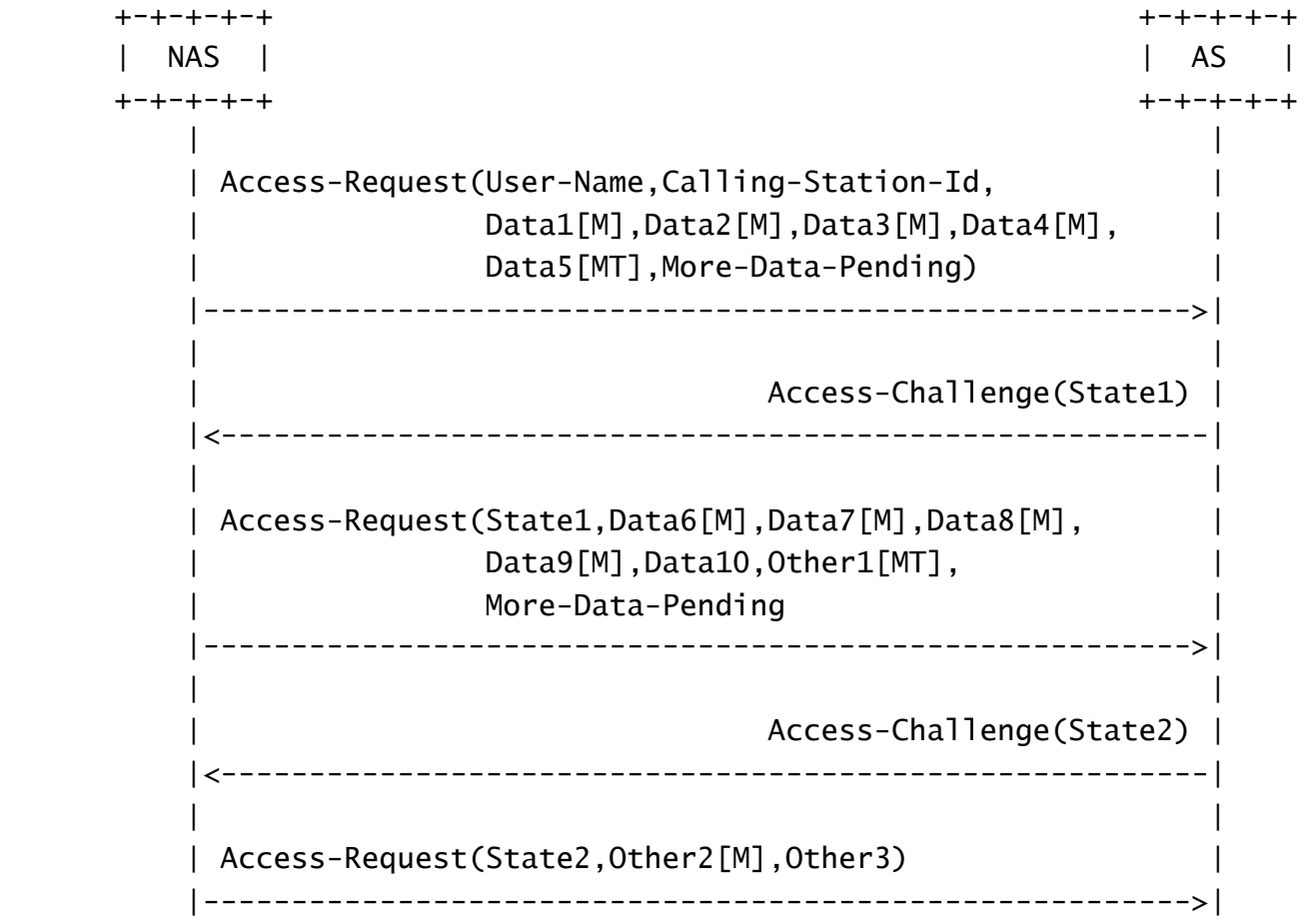


  - Value: Not defined yet

Example: Access-Request

- Maximum packet length = 8 attributes

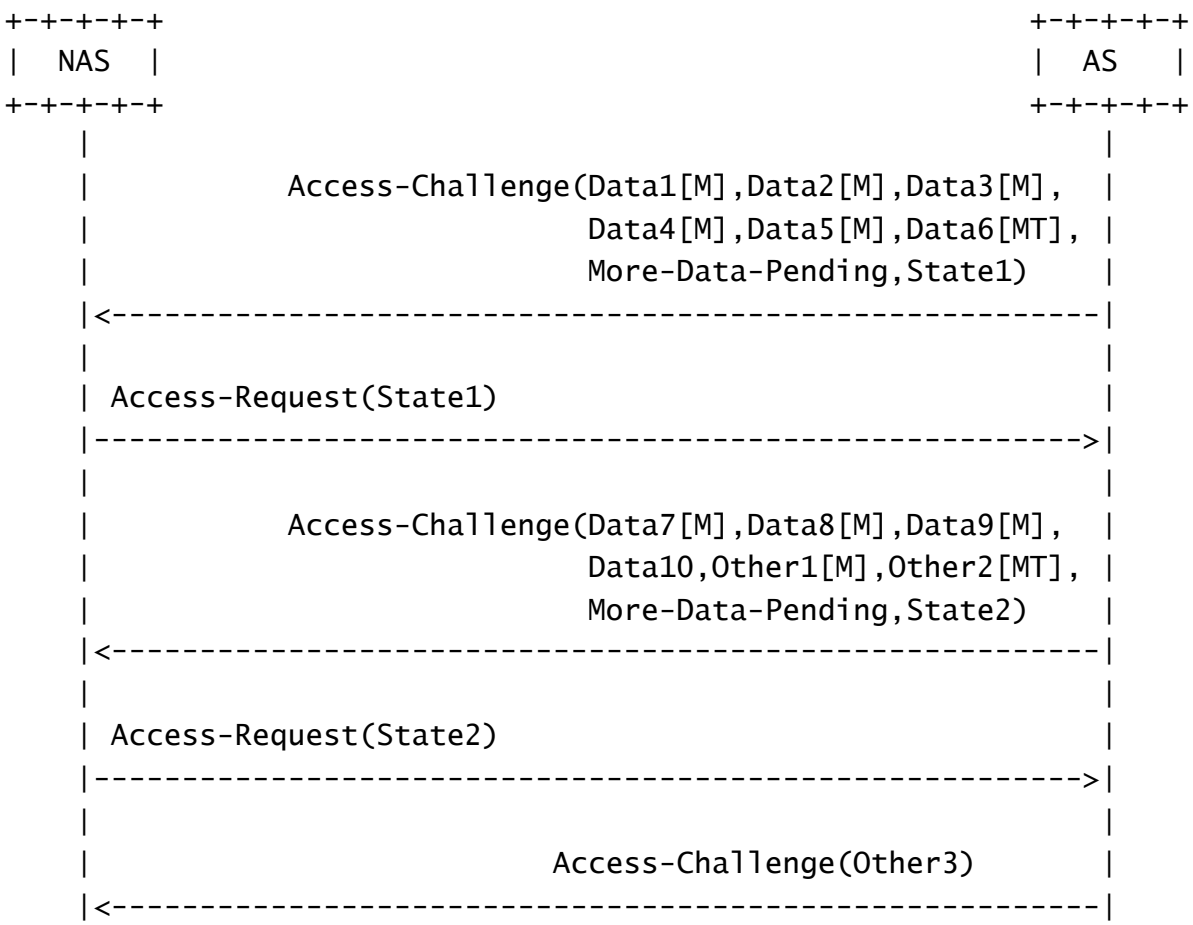
Access-Request = User-Name, Calling-Station-Id, Data1[M], Data2[M], Data3[M], Data4[M], Data5[M], Data6[M], Data7[M], Data8[M], Data9[M], Data10, Other1[M], Other2[M], Other3



Example: Access-Challenge

- Maximum packet length = 8 attributes

Access-Challenge = Data1[M], Data2[M], Data3[M], Data4[M], Data5[M], Data6[M], Data7[M], Data8[M], Data9[M], Data10, Other1[M], Other2[M], Other3



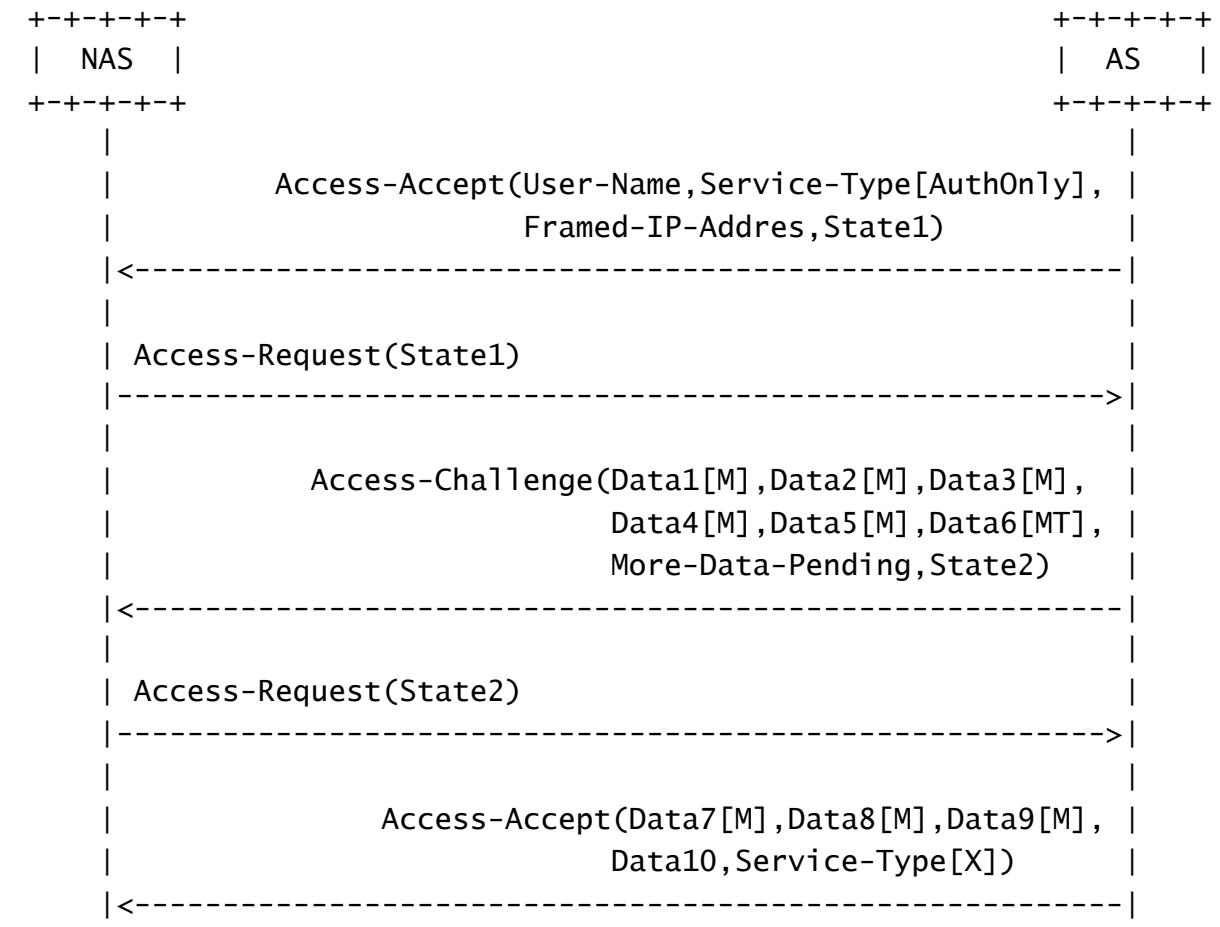
Example: Access-Accept

- Some attributes are allowed to appear ONLY in *Access-Accept* packets
  - They cannot be present in Access-Challenge packets
  - Previous solution not directly applicable
- Solution:
  - AS sends *Access-Accept* including all these attributes
    - *Service-Type*="Authorize-Only"
    - Include *State* attribute
  - NAS requests rest of information before granting access
    - *Access-Request/Access-Challenge* exchanges
    - Last chunk is *Access-Accept* with the actual *Service-Type*

Example: Access-Accept

- Maximum packet length = 8 attributes

Access-Accept = User-Name, Service-Type[X], Framed-IP-Address, Data1[M], Data2 [M], Data3[M], Data4[M], Data5[M], Data6[M], Data7[M], Data8[M], Data9[M], Data10

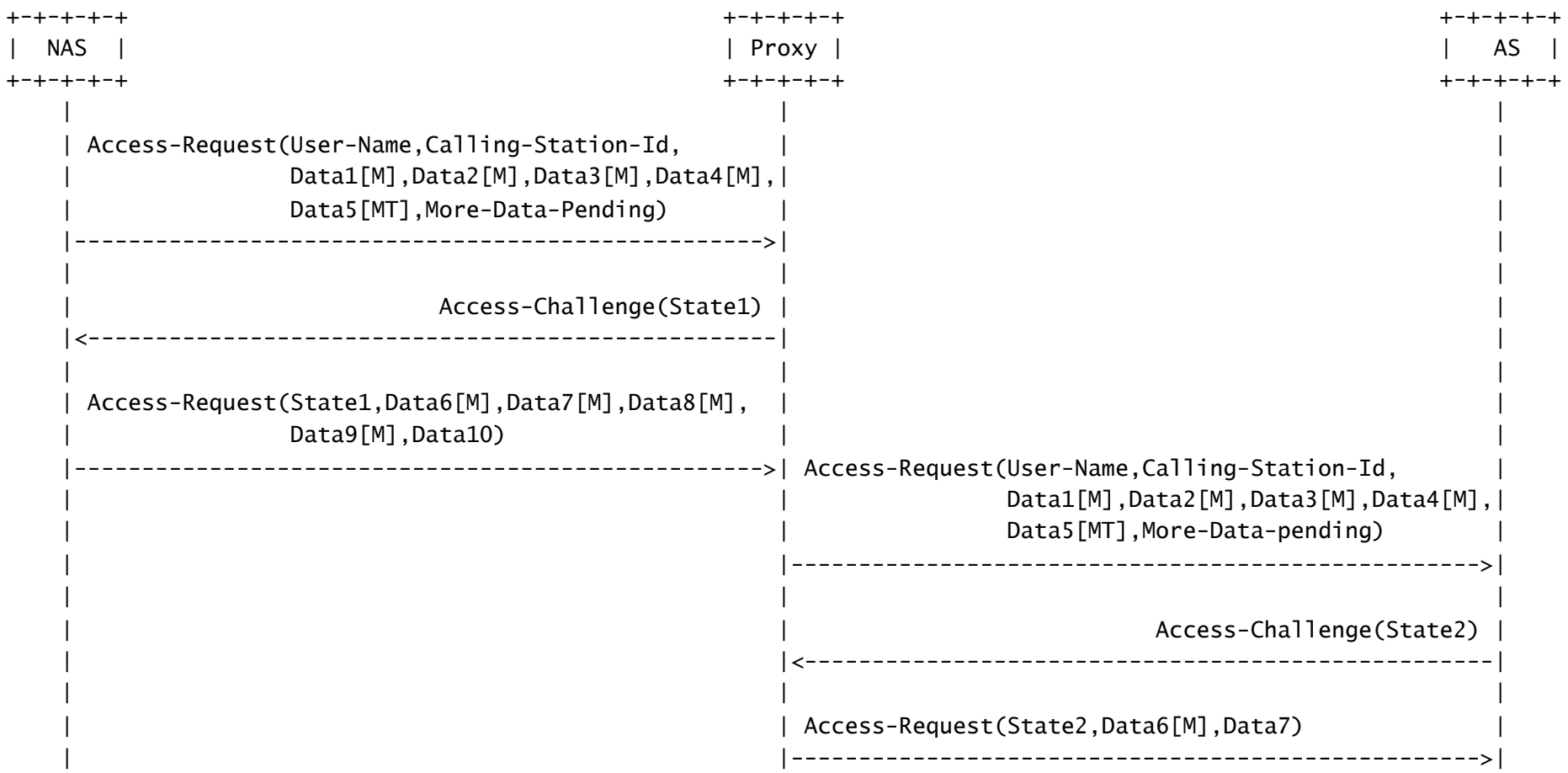


Proxies

- Can they introduce attributes (e.g. Proxy-State)?
  - As long as they do not exceed the 4KB limit for each chunk
  - Sender may need to leave enough room for extra attributes
    - E.g. Make chunks < 3 KB instead of 4 KB
    - A new attribute similar to Framed-MTU might be used for this purpose
- Can they modify attributes?
  - Proxy interacts with sender to obtain the original packet
    - Need to hold state until all chunks are received
  - Proxy modifies attributes and generates new packet
  - Proxy delivers new chunks to the receiver

Proxies

- Can proxies modify attributes?



Does the WG consider this proposal interesting to become a WG item?