MultiCastNewsTransportProtocol

Heiko W.Rupp <hwr@pilhuhn.de>

http://www.pilhuhn.de/mcntp/

draft-rfced-exp-rupp-03.txt

IETF-40

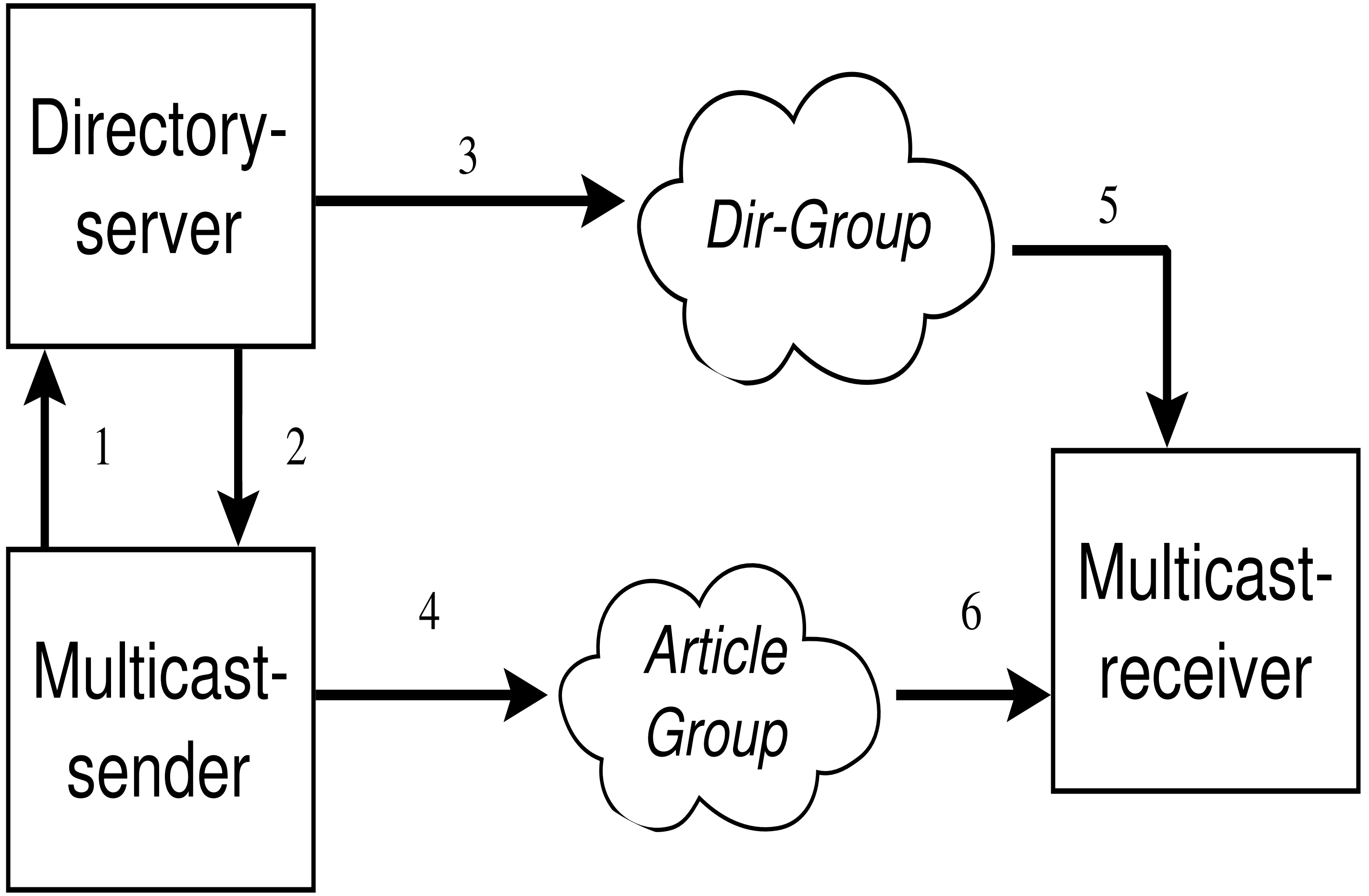
Mcntp-Components

- Directory server
  - Gives relation between newsgroup(s) and multicastgroup(s)
  - Distributes list of news<->multicastgroups on group *mcntp-directory.mcast.net*
  - Configuration by configuration file
- Multicast sender
  - Asks directory server at startup to obtain a multicast group to send to.
  - Compresses articles if wished
  - Produces a (public key) digital signature for each article
  - Sends article off

Mcntp-Components Cont'd

- Multicast receiver
  - Listens to *mcntp-directory.mcast.net* and joins appropriate multicastgroup if a matching newsgroup is found
  - Checks digital signature on received articles
  - Decompress article if needed
  - Feed article to a NNTP-Server if one is operational, else spool article to disk if wanted by admin

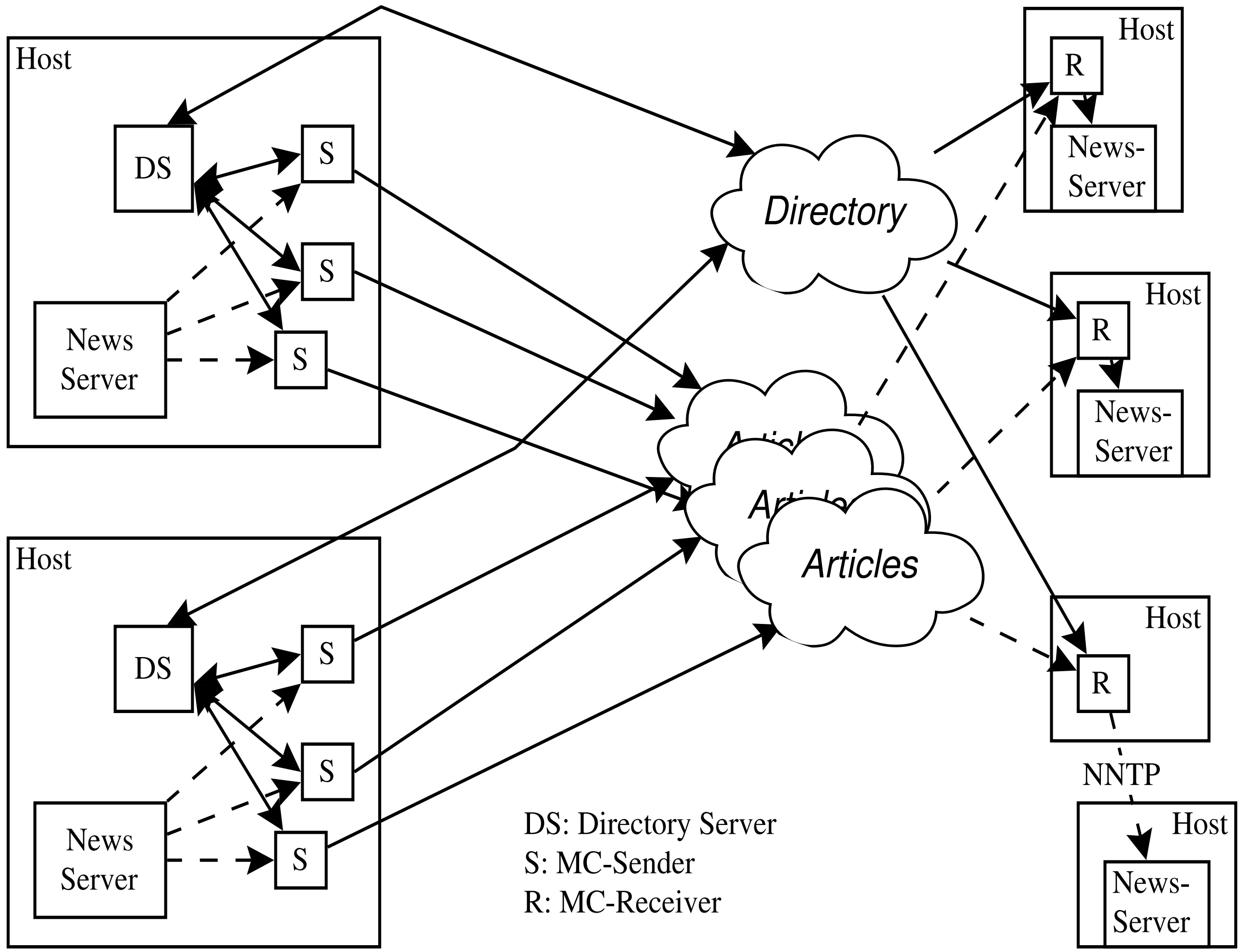
Interactions



Interactions (2)

- Interactions between Components
  - 1 MC-Sender sends a request for a mutlicastgroup to the directoryserver
  - 2 The Directoryserver returns a multicastgroup ..
  - 3 .. and sends the newsgroup <-> multicastgroup relation to a well known announce group
  - 4 The sender starts sending in the multicastgroup
  - 5 A MC-receiver subscribes to the announcement group ..
  - 6 .. and finally subscribes to the article group to get articles

Interactions (3)



MCNTP Limitations

- Only one article / one UDP packet
- UDP packets are limited to 64kByte patckes (in IPv4)
  - larger articles can't be transported
  - Statistics on various servers have shown, that > 90% of all articles (in numbers, not volume) are less than 64kBytes. These take approx. 60-70% of the volume
- UDP packets can get lost
  - if underlying multicast infrastructure works, then this is no issue
  - Practical use at a ISP shows article loss below 0,1 %
  - Lost articles can be sent with a delayed NNTP feed

Possible future enhancements

- Special "cancel" packets
  - Contain message id(s) of articles that are supposed to be canceled
  - Like distribution of noceem lists
- Doing article fragmentation to be able to also transport larger articles than 64 kBytes
  - Some FEC would be needed
  - What value is a good fragment size?
    - Automagic MTU discovery does not scale
    - Can give silly values

Practical Results

- Runs successful at german ISP NTG/Xlink
- Is well suited for delivery over satellite
  - Has been tested at Orion Network Systems (onsi.com)
    - Average article is processed at reciever side 1.5 secs. after the sender at the satellite uplink received it.
    - Max delay of 3 seconds encountered.
- 5 secs of delay for NNTP feed are enough