

Team 1: Content-Centric Networking (CCN)

It is our belief that the future of the Internet is based on content centric networking (CCN)

The current IPv4 (Internet Protocol) version 4 Internet architecture in use today is based on connection between hosts using source and destination IP addresses. Network attacks, depletion of IP addresses, increased latency in serving content are amongst the many disadvantages that IPv4 offers (Ding et al., 2016). There are various research projects being funded by the U.S. National Science Foundation (NSF) to present alternatives to the current architecture. One of these alternatives is called Content-Centric Networking (CCN) a form of Information Centric Networks (ICN) which is primarily based on content cache and delivery. The CCN architecture has 3 layers viz. Network Provider Infrastructure Layer, Services Aware Layer, and the Information Overlay Layer (Ding et al., 2016). Furthermore, endpoints connect to each other on named data instead of IP addresses (Arokiaraj & Muthumani, 2020). Some of the advantages of this architecture include:

- Attack detection and verification of all packets
- Network load reduction
- Enhance router storage (cache)
- Shorter downloading times as well as low communication overheads (Mishra & Dave, 2015)

In conclusion, CCN is proving to be beneficial for current network architectures as well as being a promising alternative to IP driven networks. Various caching strategies are being researched to enhance this architecture (Mishra & Dave, 2015).

References

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