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Applicability of the Hybrid Information-Centric Networking Architecture
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Abstract

This document discusses the applicability of the Hybrid Information-Centric Networking (hICN) architecture by showing examples of the development of applications on top of hICN transport and the deployment of hICN routers in the IPv6 Internet. Among the many

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1. Introduction

1.1. Notational Conventions

The words "MUST", "MUST NOT", "SHOULD", and "MAY" are used in this document. It's not shouting; when these words are capitalized, they have a special meaning as defined in [RFC2119].

2. References

2.1. Normative References

- [RFC0793] Postel, J., "Transmission Control Protocol", STD 7, RFC 793, DOI 10.17487/RFC0793, September 1981, <<https://www.rfc-editor.org/info/rfc793>>.
- [RFC1081] Rose, M.T., "Post Office Protocol: Version 3", RFC 1081, DOI 10.17487/RFC1081, November 1988, <<https://www.rfc-editor.org/info/rfc1081>>.
- [RFC1624] Rijsinghani, A., Ed., "Computation of the Internet Checksum via Incremental Update", RFC 1624, DOI 10.17487/RFC1624, May 1994, <<https://www.rfc-editor.org/info/rfc1624>>.
- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, DOI 10.17487/RFC2119, March 1997, <<https://www.rfc-editor.org/info/rfc2119>>.
- [RFC3031] Rosen, E., Viswanathan, A., and R. Callon, "Multiprotocol Label Switching Architecture", RFC 3031, DOI 10.17487/RFC3031, January 2001, <<https://www.rfc-editor.org/info/rfc3031>>.
- [RFC3550] Schulzrinne, H., Casner, S., Frederick, R., and V. Jacobson, "RTP: A Transport Protocol for Real-Time Applications", STD 64, RFC 3550, DOI 10.17487/RFC3550, July 2003, <<https://www.rfc-editor.org/info/rfc3550>>.

- [RFC3587] Hinden, R., Deering, S., and E. Nordmark, "IPv6 Global Unicast Address Format", RFC 3587, DOI 10.17487/RFC3587, August 2003, <<https://www.rfc-editor.org/info/rfc3587>>.
- [RFC4291] Hinden, R. and S. Deering, "IP Version 6 Addressing Architecture", RFC 4291, DOI 10.17487/RFC4291, February 2006, <<https://www.rfc-editor.org/info/rfc4291>>.
- [RFC4302] Kent, S., "IP Authentication Header", RFC 4302, DOI 10.17487/RFC4302, December 2005, <<https://www.rfc-editor.org/info/rfc4302>>.
- [RFC6830] Farinacci, D., Fuller, V., Meyer, D., and D. Lewis, "The Locator/ID Separation Protocol (LISP)", RFC 6830, DOI 10.17487/RFC6830, January 2013, <<https://www.rfc-editor.org/info/rfc6830>>.
- [RFC8200] Deering, S. and R. Hinden, "Internet Protocol, Version 6 (IPv6) Specification", STD 86, RFC 8200, DOI 10.17487/RFC8200, July 2017, <<https://www.rfc-editor.org/info/rfc8200>>.

2.2. Informative References

- [CCN] Jacobson, V., Smetters, D., Thornton, J., Plass, M., Briggs, N., and R. Braynard, "Networking named content", DOI 10.1145/1658939.1658941, Proceedings of the 5th international conference on Emerging networking experiments and technologies - CoNEXT '09, 2009, <<https://doi.org/10.1145/1658939.1658941>>.
- [I-D.irtf-icnrg-ccnxmessages] Mosko, M., Solis, I., and C. Wood, "CCNx Messages in TLV Format", Work in Progress, Internet-Draft, draft-irtf-icnrg-ccnxmessages-09, 24 January 2019, <<http://www.ietf.org/internet-drafts/draft-irtf-icnrg-ccnxmessages-09.txt>>.
- [I-D.irtf-icnrg-ccnxsemantics] Mosko, M., Solis, I., and C. Wood, "CCNx Semantics", Work in Progress, Internet-Draft, draft-irtf-icnrg-ccnxsemantics-10, 24 January 2019, <<http://www.ietf.org/internet-drafts/draft-irtf-icnrg-ccnxsemantics-10.txt>>.
- [I-D.irtf-icnrg-mapme] Auge, J., Carofiglio, G., Muscariello, L., and M. Papalini, "MAP-Me : Managing Anchorless Mobility in Content Centric Networking", Work in Progress, Internet-

Draft, draft-irtf-icnrg-mapme-05, 9 June 2020, <<http://www.ietf.org/internet-drafts/draft-irtf-icnrg-mapme-05.txt>>.

[I-D.irtf-icnrg-terminology]

Wissingh, B., Wood, C., Afanasyev, A., Zhang, L., Oran, D., and C. Tschudin, "Information-Centric Networking (ICN): CCNx and NDN Terminology", Work in Progress, Internet-Draft, draft-irtf-icnrg-terminology-08, 17 January 2020, <<http://www.ietf.org/internet-drafts/draft-irtf-icnrg-terminology-08.txt>>.

[I-D.muscariello-intarea-hicn]

Muscariello, L., Carofiglio, G., Auge, J., Papalini, M., and M. Sardara, "Hybrid Information-Centric Networking", Work in Progress, Internet-Draft, draft-muscariello-intarea-hicn-04, 20 May 2020, <<http://www.ietf.org/internet-drafts/draft-muscariello-intarea-hicn-04.txt>>.

[MAN]

Baugher, M., Davie, B., Narayanan, A., and D. Oran, "Self-verifying names for read-only named data", DOI 10.1109/infcomw.2012.6193505, 2012 Proceedings IEEE INFOCOM Workshops, March 2012, <<https://doi.org/10.1109/infcomw.2012.6193505>>.

[MIR]

Garcia-Luna-Aceves, J., Martinez-Castillo, J., and R. Menchaca-Mendez, "Routing to Multi-Instantiated Destinations: Principles, Practice, and Applications", DOI 10.1109/tmc.2017.2734658, IEEE Transactions on Mobile Computing Vol. 17, pp. 1696-1709, July 2018, <<https://doi.org/10.1109/tmc.2017.2734658>>.

[NDN]

Zhang, L., Afanasyev, A., Burke, J., Jacobson, V., claffy, k., Crowley, P., Papadopoulos, C., Wang, L., and B. Zhang, "Named data networking", DOI 10.1145/2656877.2656887, ACM SIGCOMM Computer Communication Review Vol. 44, pp. 66-73, July 2014, <<https://doi.org/10.1145/2656877.2656887>>.

[RAQ]

Carofiglio, G., Gallo, M., Muscariello, L., Papalini, M., and S. Wang, "Optimal multipath congestion control and request forwarding in Information-Centric Networks", DOI 10.1109/icnp.2013.6733576, 2013 21st IEEE International Conference on Network Protocols (ICNP), October 2013, <<https://doi.org/10.1109/icnp.2013.6733576>>.

[WLD]

Carofiglio, G., Muscariello, L., Papalini, M., Rozhnova, N., and X. Zeng, "Leveraging ICN In-network Control for Loss Detection and Recovery in Wireless Mobile networks",

DOI 10.1145/2984356.2984361, Proceedings of the 2016
conference on 3rd ACM Conference on Information-Centric
Networking - ACM-ICN '16, 2016,
<<https://doi.org/10.1145/2984356.2984361>>.

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