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Applicability of the Hybrid Information-Centric Networking Architecture draft-muscariello-hicn-applicability-latest

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.
- [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.

- [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.
- [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.

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.

Mosko, M., Solis, I., and C. Wood, "CCNx Messages in TLV Format", draft-irtf-icnrg-ccnxmessages-09 (work in progress), 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", draft-irtf-icnrg-ccnxsemantics-10 (work in progress), 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", draft-irtf-icnrg-mapme-04 (work in progress), 3 November 2019, http://www.ietf.org/internet-drafts/draft-irtf-icnrg-mapme-04.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", draft-irtf-icnrg-terminology-08 (work in progress), 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., and M. Papalini, "Hybrid Information-Centric Networking", draft-muscariello-intarea-hicn-03 (work in progress), 30 October 2019, http://www.ietf.org/internet-drafts/draft-muscariello-intarea-hicn-03.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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