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IEEE Standard for
Local and metropolitan area networks—

Link Aggregation

IEEE Computer Society

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LAN/MAN Standards Committee

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3 Park Avenue
New York, NY 10016-5997
USA

IEEE Std 802.1AX™-2014
(Revision of
IEEE Std 802.1AX-2008)

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Abstract: MAC-independent Link Aggregation capability and general information relevant to specific MAC types are defined in this standard. Link Aggregation allows parallel full-duplex point-to-point links to be used as if they were a single link and also supports the use of multiple links as a resilient load sharing interconnect between multiple nodes in two separately administered networks.

Keywords: Aggregated Link, Aggregator, Distributed Resilient Network Interconnect, DRNI, IEEE 802®, IEEE 802.1AX™, interconnect, Link Aggregation, Link Aggregation Group, local area network, management, Network-Network Interface, NNI

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Introduction

This introduction is not part of IEEE Std 801.AX™-2014, IEEE Standard for Local and metropolitan area networks—Link Aggregation.

This standard contains state-of-the-art material. The area covered by this standard is undergoing evolution. Revisions are anticipated within the next few years to clarify existing material, to correct possible errors, and to incorporate new related material. Information on the current revision state of this and other IEEE 802® standards can be obtained from:

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IEEE Standard for
Local and metropolitan area networks—

Link Aggregation

1. Overview

1.1 Scope

Link Aggregation provides protocols, procedures, and managed objects that allow the following:

— One or more parallel instances of full-duplex point-to-point links to be aggregated together to form a Link Aggregation Group (LAG), such that a MAC Client can treat the LAG as if it were a single link.

— A resilient interconnect using multiple full-duplex point-to-point links among one to three nodes in a network and one to three nodes in another, separately administered, network, along with a means to ensure that frames belonging to any given service will use the same physical path in both directions between the two networks.

This standard defines the MAC-independent Link Aggregation capability and general information relevant to specific MAC types that support Link Aggregation. The capabilities defined are compatible with previous versions of this standard.

1.2 Purpose

Link Aggregation allows the establishment of full-duplex point-to-point links that have a higher aggregate bandwidth than the individual links that form the aggregation, and the use of multiple systems at each end of the aggregation. This allows improved utilization of available links in bridged local area network (LAN) environments, along with improved resilience in the face of failure of individual links or systems. In