

IEEE 802.3  
50 Gb/s Ethernet Over a Single Lane and  
Next Generation 100 Gb/s & 200 Gb/s  
Ethernet Call For Interest

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# CFI Request

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Ethernet has a successful track record of reusing technology in order to enable new cost-optimized solutions for broad market adoption. Recently, the IEEE 802.3bs 400 Gb/s Ethernet project has begun development of new higher rate optical and electrical signaling technologies beyond 25 Gb/s. Hyper-scale data centers, being aggressive adopters of cost effective solutions for both switch and server applications, are looking to enable the next generation of higher speed solutions, such as new 50 Gb/s Ethernet, a new 200 Gb/s Ethernet, and a denser 100 Gb/s Ethernet solutions.

Two areas of study exist. One to study single lane 50 Gb/s Ethernet applications, and one to study 100 Gb/s and 200 Gb/s Ethernet applications. **This Call For Interest is a request for the formation of these two study groups to jointly study the market requirements to address these server and switch applications and to provide the appropriate Ethernet specifications.** It is expected that the study groups will work together to generate the appropriate project documentation to address market needs.

# Overview: Motivation

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Leverage 50 Gb/s electrical IO signaling technology to develop cost optimized single-lane solutions and higher speed multi-lane solutions.

Provide 50 Gb/s MAC rate and PHYs

Provide 200 Gb/s MAC rate and PHYs

Provide denser 100 Gb/s PHYs

Web-scale data centers and cloud based services are presented as leading applications.

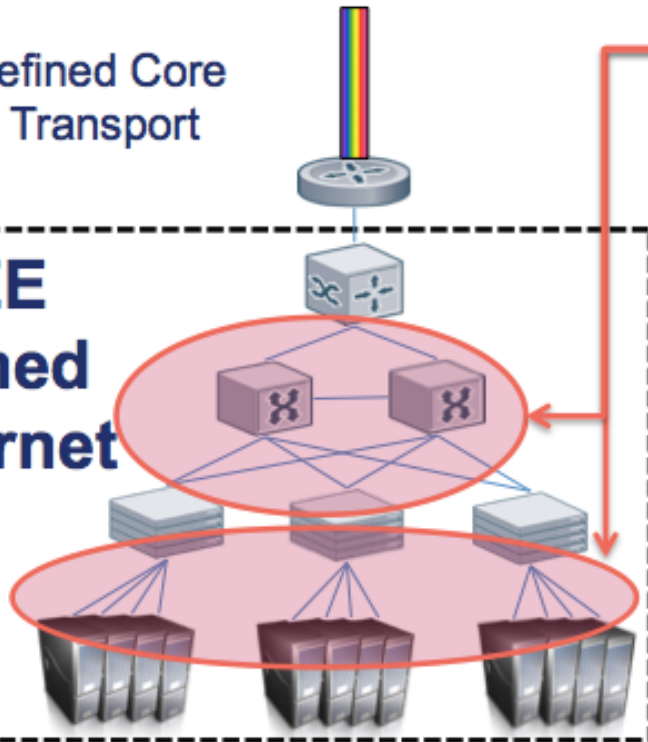
Synergy with Enterprise networking extends the application space and potential market adoption.

# What Are We Talking About?

ITU-Defined Core  
OTN Transport

**IEEE  
defined  
Ethernet**

**Our  
Scope**



Router

Leaf/Spine

TOR/Leaf

Server

Leading Application Space for  
next generation Data Center  
Ethernet

- Optimized multi-lane interconnect for switch connectivity and intra-equipment interconnect (backplanes)
- Optimized single lane interconnect for servers and switches

# Why Now?

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50 Gb/s SERDES investment and development underway

Ethernet rates becoming defined by the optimal implementation of these SERDES rates  
Necessary to enable data center architectures (radix) and practical implementations  
(chip packaging)

Web-scale data centers and cloud based services need Highly Cost optimized servers with >25GbE capability

Industry has recognized the value of leveraging common technology developments across multiple applications by implementing in multiple configurations of lanes.

Rapid standardization avoids interoperability challenges

Ethernet is immediately able to leverage technology for broader adoption and enable greater economy of scale

There is no 50 Gb/s Ethernet single lane standardization effort under way

There is no 200 Gb/s Ethernet standardization effort under way

Continuing Ethernet's success

Open and common specifications; Ensured Interoperability; Security of development investment

# Logistics

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An overview presentation session will be given to support consensus building:

Date - Tuesday, Nov 10th

Time – 7 to 8pm

Location – Reunion EF

CFI Presentation:

[http://www.ieee802.org/3/cfi/request\\_1115\\_1.html](http://www.ieee802.org/3/cfi/request_1115_1.html)

Request to form Study Group will occur during closing 802.3 WG Plenary on Thursday

Questions?

Thank you!