# LwIP BOF
# Why are we here

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# Agenda

**15:10**    Why are we here                              5 minutes
        -Zhen Cao

**15:15**    Introduction and Problems                    15 minutes
        -Hui Deng

**15:30**    Lightweight TCP/IP Considerations            15 minutes
        -David Borman

**15:45**    Discussion                                   Until 16:10
        -Bob Hinden

# We are here when TCP/IP meets the constrained devices

- Computational constraint
  - 8-bit or 16-bit micro-controllers
  - Several kilobytes of RAM
- Communicational constraint
  - The connection within the network and to the rest of the Internet is constrained
- Energy constraint
  - Battery supplied devices with no recharge for a long period of time

# What's on the table?

- Implementing the TCP/IP on these constrained devices are not trivial
- There are some techniques
  - Lightweight design of data structures and packet processing
  - Smart memory management
  - TCP implementation optimization
  - Cross layer optimization
- For example, uIPv6 and BLIP

# What are missing?

- These activities on lightweight implementation are ad-hoc

- Not well documented at one place

- Lack of guidance on interoperable lightweight implementations


- So we initiate the LwIP BOF @IETF79
  - Mailing list : https://www.ietf.org/mailman/listinfo/lwip

# What's the plan

- To ensure and guide interoperable lightweight IP protocols implementations, we are to develop several documents

    1.  Produce the "Problem Statement of Lightweight IP Protocols Implementations" to specify the common known issues met by implementers

    2.  Produce a document describing implementation techniques that met the challenges listed in the problem statement document

    3.  Develop a set of the profiles for minimal IP implementations (implementation guidelines), which can be used to reduce the complexity of an implementation and at the same time maintain interoperability with other implementations

# Thank you !