

# Indian Internet Research and Engineering Forum - IIREF

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# Internet Standard Development

- Internet Engineering Task Force (IETF)
  - Organization responsible for development of Internet Standards
    - Egs. include: TCP, IP Protocols
- Indian Internet Research and Engineering Forum (IIREF)
  - An effort carried out by C-DAC Bangalore, and sponsored by MeitY, Govt. of India

# Definition of Internet Standard

- As defined by IETF

*“An Internet Standard is characterized by a high degree of technical maturity and by a generally held belief that the specified protocol or service provides significant benefit to the Internet community.”*

# About IETF

- A community of people contributing jointly towards protocol development.
- There are 7 areas and a large number of working groups in each area.
- Membership is free and anybody is free to contribute to IETF.
- How to contribute ?
  - You can read the protocol drafts being circulated and give their comments
  - You can also propose new drafts

# IETF Meetings

- IETF meetings happen three times in a year
  - Discussions and debates will go on in each of the numerous working groups
    - and new groups that are getting created
- It is here, that the drafts get promoted into standards, or get dropped or modifications are suggested for improvements

# IETF Maturity Levels

- 3-tier maturity ladder
  - Proposed Standard, Draft Standard, and Standard
  - Defined in RFC 2026
    - Requires a report that documents interoperability between atleast two implementations from different code bases as an interim step – Draft Standard – before a spec can be advanced further to the next level - Standard
- 2-tier maturity ladder
  - Best Current Practice; Defined in RFC 6410
  - Created as most proposed standards does not mature to the next higher level of Draft standard
    - IESG (Internet Engineering Steering Group) discussed proposal to come to 2-tier maturity from 3-tier ladder

# What we do?

- Develop internal capabilities for development of Internet Standards in various domains of Internet Security including
  - Digital Time Stamping and Digital Tokens
  - Transport Layer Security - TLS, DTLS
  - DNS Security
  - IoT Security

# What we can do for You?

- Sponsor you to attend IETF Meetings, provided
  - You demonstrate your abilities and work with respect to Internet Standards
  - You apply for fellowship



# About IIREF

- IIREF - Indian Internet Engineering Forum aims to serve as a platform for Indian researchers and practitioners to come together and collaborate among themselves in their specific areas of interest in alignment with the IETF working groups.
- The forum aims to build and nurture competencies through conduction of awareness and training programs, and also in future, provide mentors to specific areas that have fairly evolved within the forum.

# About IIREF

- IIREF therefore aims to evolve as a community driven forum, wherein increasing and active contributions from the Indian community, towards development of protocols in various areas under the IETF is envisaged.

# Where to Start?

- Visit IETF Web page – [www.ietf.org](http://www.ietf.org)
- Checkout the Working Groups under various areas
- Subscribe to the mailing list of 1-3 of them of your interest
- Read the drafts & Follow the discussions
- Raise questions
- Identify issues
- Propose Solutions

# How to propose a new ID ?

- **Identify a Problem**
  - Identify (frequent) faulty implementations of a protocol
  - Identify (many) incompatible implementations of a protocol
  - Identify areas of optimization
  - Identify areas of Security concerns / probable attacks
- **Work a Solution**
  - Develop a solution & implement it
    - Better to keep it simple – say adding a bit ! Avoiding unnecessary communications etc...
  - Ensure it solves the problem
  - Propose it with links to the code and tests carried out

# Thank You



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