

# NCRG

## Network Complexity Research Group

Chairs: Michael Behringer, Geoff Huston

5 Nov 2012, Atlanta

<http://irtf.org/ncrg/>

# History

- Apr 2010, Closed meeting; London
- Sep 2010, Closed meeting; Los Angeles
- Nov 2010: Complexity Panel at [RIPE-61](#)
- May 2011: Complexity BoF at [RIPE-62](#)
- Jul 2012: Pre-NCRG meeting (Quebec)
- Mar 2012: 1<sup>st</sup> NCRG meeting (Vancouver)
- Oct 2012: first draft published
- Nov 2012: 2<sup>nd</sup> NCRG meeting (Atlanta)

# Charter:

# Network Complexity Research Group

The Network Complexity Research Group aims at **defining and analyzing the complexity of IP based networks.**

There is a general perception that unnecessary complexity should be avoided, and when deciding between two approaches in networking, complexity is usual an important factor. However, the term “complexity” is rarely well defined, and decisions on complexity are mostly made on subjective terms.

The Network Complexity Research Group **provides objective definitions, metrics and background research to help making decisions where complexity is a factor. The ultimate goal is to provide factual and objective information and metrics to be used in network design and protocol design.** It is highly desirable to have **practical and objective information on network complexity as an input into the IETF process.**

Areas of interest include:

- 1) Research with the goal of defining “network complexity”, and defining relevant metrics.**
- 2) Comparative research between various network architectures, protocols or approaches.**
- 3) Methods and ideas to contain, control, or reduce complexity in IP based networks.**
- 4) Collect use cases regarding specific network designs or failure cases where complexity played a role.**

The group will report progress through a publicly accessible web site and presentations at IETF meetings. Relevant information and research developed by the NMRG will be submitted for publication as Experimental or Informational RFCs.

# Network Complexity Research Group

Atlanta, Monday, 5 Nov 2012, 9:00-11:30

- Overview, agenda bashing (10 min)
- "Modelling Complexity of Enterprise Routing Design": Xin Sun (Florida International University), Sanjay Rao (Purdue University) and Geoffrey Xie (Naval Postgraduate School).
- Draft-behringer-complexity-framework (Michael Behringer) (20 min)
- Discussion (80 min)

<http://networkcomplexity.org/>

# Goal

- Over all: Provide a useful framework for the IETF
  - Definitions, terms, reference models, etc.
  - Focus: **Network architecture** and **protocols**
  - Ideally: Metrics
- Documents:
  - Framework draft
  - RFC3439-bis? (“Some Internet Architectural Guidelines and Philosophy”)
  - 2 use case drafts, well documented
  - 2 drafts approaches to measure complexity