2017 Jonathan B. Postel Service Award
Jonathan B. Postel

- First editor of the IETF RFC Series
- Authored or co-authored more than 200 RFCs
- First director of IANA
- Member of the IAB (1990-1993)
- Chair of the IRTF (1992-1995)
- First member of the Internet Society (1992)
Be conservative in what you do,
be liberal in what you accept from others.

- Robustness Principle, RFC 793
The Jonathan B. Postel Award was established by the Internet Society to honor individuals or organizations that, like Jon Postel, have made outstanding contributions in service to the data communications community.

Awardees are recognized with a crystal trophy and a USD 20,000 prize.
Jonathan B. Service Award Past Honorees

1999: Jon Postel (posthumously)  
2000: Scott Bradner  
2001: Daniel Karrenberg  
2002: Steve Wolff  
2003: Peter Kirstein  
2004: Phill Gross  
2005: Jun Murai  
2006: Bob Braden and Joyce K. Reynolds  
2007: Nii Quaynor  
2008: La Fundación Escuela Latinoamericana de Redes  
2009: CSNET  
2010: Prof. Jianping Wu  
2011: Prof. Kilnam Chon  
2012: Pierre Ouedraogo  
2013: Elizabeth "Jake" Feinler  
2014: Mahabir Pun  
2015: Rob Blokzijl  
2016: Kanchana Kanchanasut
Jonathan B. Postel Award
2017 Honoree

kc claffy
For her pioneering work on Internet measurement through the development of infrastructure and methodologies for data collection, analysis, and sharing around the world.
CAIDA's AS Core 2017 Internet Graph
http://www.caida.org/research/topology/as_core_network/

INTRODUCTION

The CAIDA AS Core visualization depicts the Internet's Autonomous Systems (ASes) geographic locations, number of customers, and interconnections. Each AS approximately corresponds to an Internet Service Provider (ISP). The geographic location of the individual AS is inferred from the centroid of its address space according to NetAcuity, a commercial geolocation service. The number of direct or indirect customers of an AS is inferred using its customer cone (described below).

For this visualization, we used the Feb 2017 Internet Topology Data Kit (ITDK). We obtained the raw IPv4 topology data from the ITDK by performing traceroute to ten randomly chosen destinations in each routed (24 BGP) AS, resulting in approximately 50 million IP addresses, 49 million inferred routers, and 50 million inferred links. We inferred the IP address-to-AS mapping using a publically available correlation between CAIDA and NetAcuity. The resulting AS topology contained 47,910 ASes and 165,495 links.

Each AS node is plotted in polar coordinates (radius, angle) on the circle, as formally defined in the equations below. The distance of each AS node from the center of the circle (the radial coordinate) is the inverse of each AS's customer cone size, roughly the number of the AS's direct or indirect customers. ASes at the outer edge of the circle have no customers and ASes at the center have the largest number of customers. The angular coordinate indicates the AS's geographic longitude.

\[
\text{radius} = \frac{1}{\log(\text{customer cone size})} \quad \text{angle} = \frac{\text{AS degree}}{\text{maximum AS degree}} + \frac{\text{length of the AS's BGP prefixes in NetAcuity}}{\text{maximum length of BGP prefixes in NetAcuity}}
\]

The core of this topology is the set of ASes with the largest customer cones, all dominated by U.S.-centric ASes.

INTERNET LAYERS

The Internet's network topology is then divided into three layers: AS, Router, and IP. The AS layer uniquely identifies an attachment point (Reference) to a service on the Internet. The router layer refers to the set of routers (enables) that traverse and maintain the Internet. The IP layer refers to the set of IP routes that traverse and maintain the Internet. To support geographically aware topology analysis, we aggregate routes into Points of Presence (PoPs). To support interdomain (between networked topology analysis, we aggregate routes by ownership-Autonomous Systems (ASes).

CUSTOMER CONE

The AS's customer cone is the set of ASes that directly or indirectly pay the AS to connect to the Internet. On the left, A has the largest cone with 6 ASes. It has two. An AS's customer cone contains the set of ASes we observe the AS announce to its peers or providers. This definition is more constrained than, but similar to, the set of ASes reachable through its customers.

Acknowledgments

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