State of the MBone

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May 1996

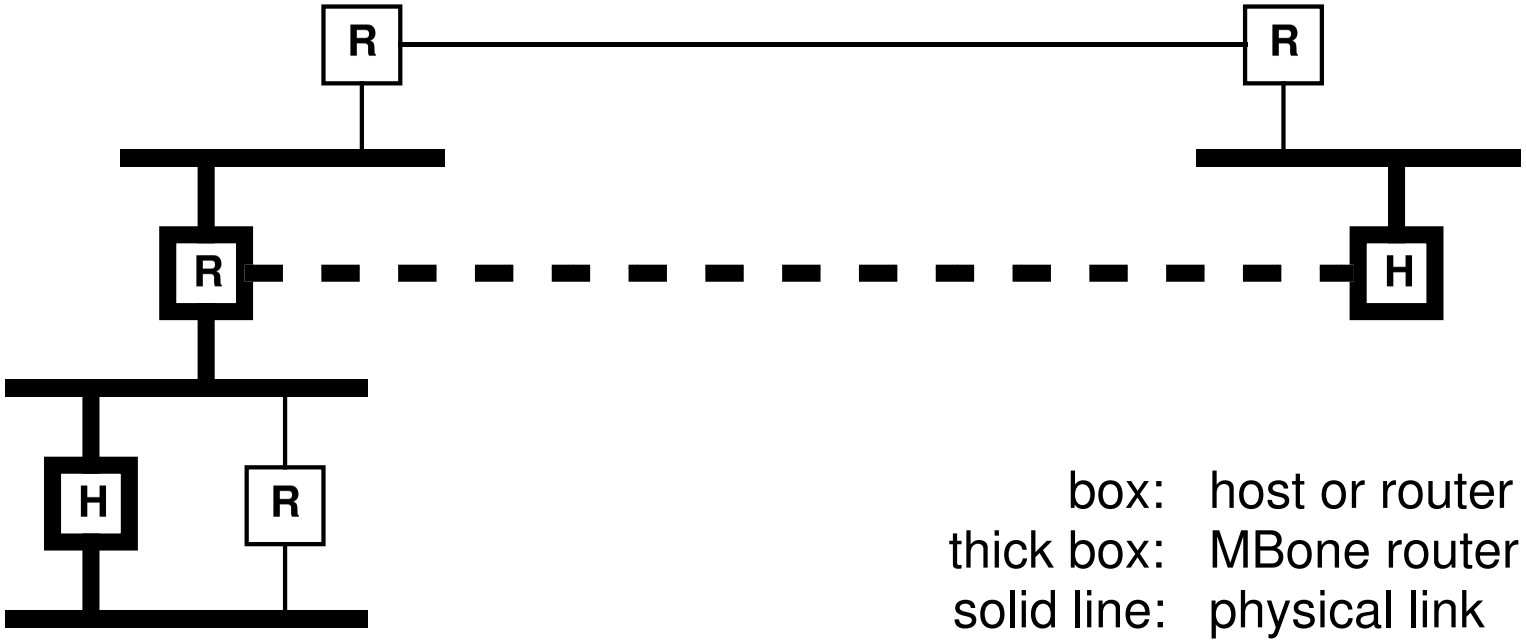
MBone?

MBone = Multicast Backbone

An infrastructure for delivering IP Multicast packets

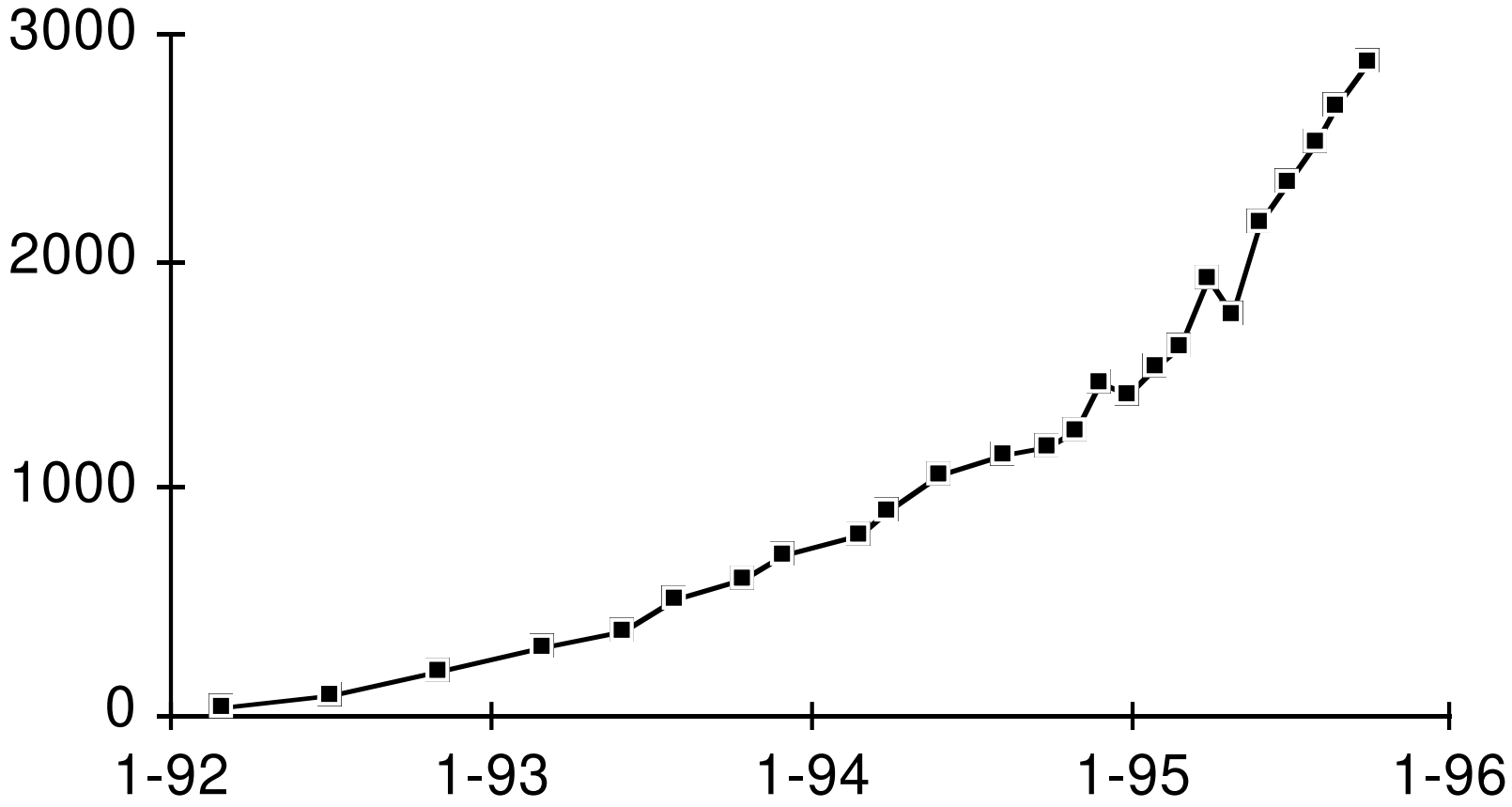
A virtual network, overlaid on the Internet

Components of the MBone



box:	host or router
thick box:	MBone router
solid line:	physical link
dashed line:	tunnel
thick line:	part of MBone

Growth of the MBone (number of subnets)



Current IP Multicast Implementations

shipping product

Sun — Solaris 2.x

SGI — Irix

x86 — Microsoft Windows 95, NT

— FTP Software (host only)

— BSDI, NetBSD, FreeBSD

— Linux

Apple — Open Transport

NeXT — NeXTSTEP (?)

Proteon, Alantec

Cisco, Bay, 3Com

patches available

Sun — SunOS 4.x

DEC — Ultrix

— OSF-1

HP — HP-UX

IBM — AIX (host only)

New Applications Enabled by the MBone

- **A/V teleconferencing:** vat, vic (LBL), nevot (UMass), ivs (INRIA), nv (PARC), rat (UCL)
- **shared workspaces:** wb (LBL), nt (UCL)
- **conference management:** sdr (UCL), mmcc (ISI)
- **scientific data dissemination:** telemetry (Woods Hole), imm (UHawaii)
- **distributed interactive simulation:** NPSnet (NPS), games

Experimental —> Production Service

- most large Internet service providers support MBone tunnels to some of their customers
- commercial routers starting slowly to supplant Unix boxes as MBone routers
- availability of MBone taken for granted by users, e.g, for IETF meetings, seminar series, Internet Multicasting Service
- much still to be done to make it a real production service!…

Making the MBone "Real"

- improvements in interoperability, manageability, and scalability of multicast routing protocols
- getting ISPs to enable "native" multicast routing
- better queueing in routers to prevent link hogs (e.g., RED) (for unicast too!)
- more bandwidth, of course