

# The Design Philosophy of the DARPA Internet Protocols

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# Introduction

- Internet protocols developed for DARPA
- Used commonly today
- Motivation behind original decisions largely unknown

# Goals

- Multiplexed utilization of existing networks
  - Must survive network/gateway outage
  - Must support multiple types of service
  - Must allow varied networks
  - Must allow distributed management of resources
  - Must be cost effective
  - Must allow for easy attachment of hosts
  - Must provide resource accountability

# Survivability

- Military purposes: cannot afford downtime
  - Problem: state is maintained all across network
  - Solution: keep all state at the end points

# Variety of Services and Networks

- Services
  - Follow "end-to-end" arguments
    - Provide features, but do not require them
      - Solve by separating TCP/IP into layers
- Networks
  - Make no assumptions about what features are provided by the physical network
    - (assume the network does not provide any extra features)

# Internet Architecture

- Does not impose restrictions on the network architecture
- Performance agnostic
- Datagram-centric