

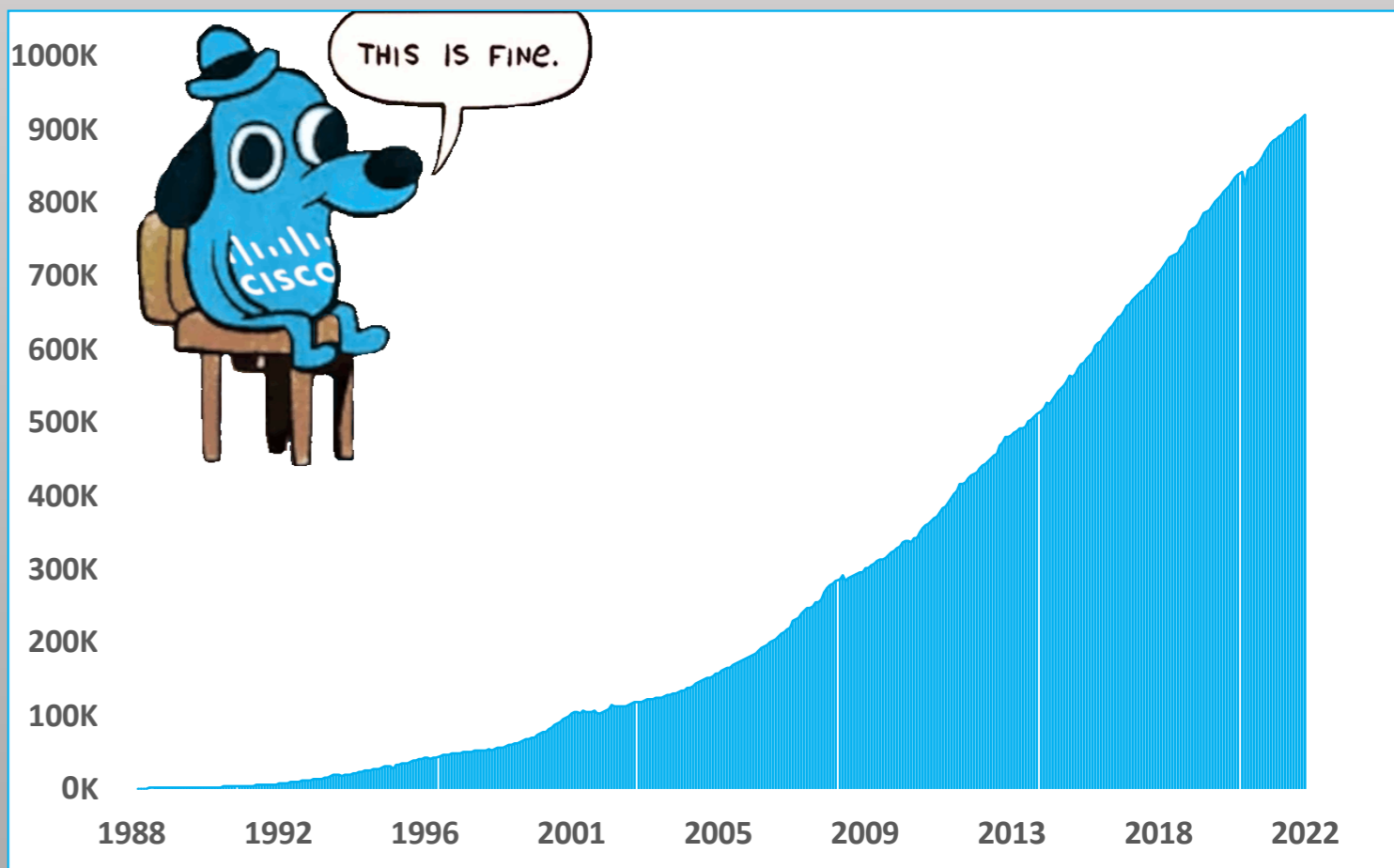
... the protocol that connects the Internet!

Motivation

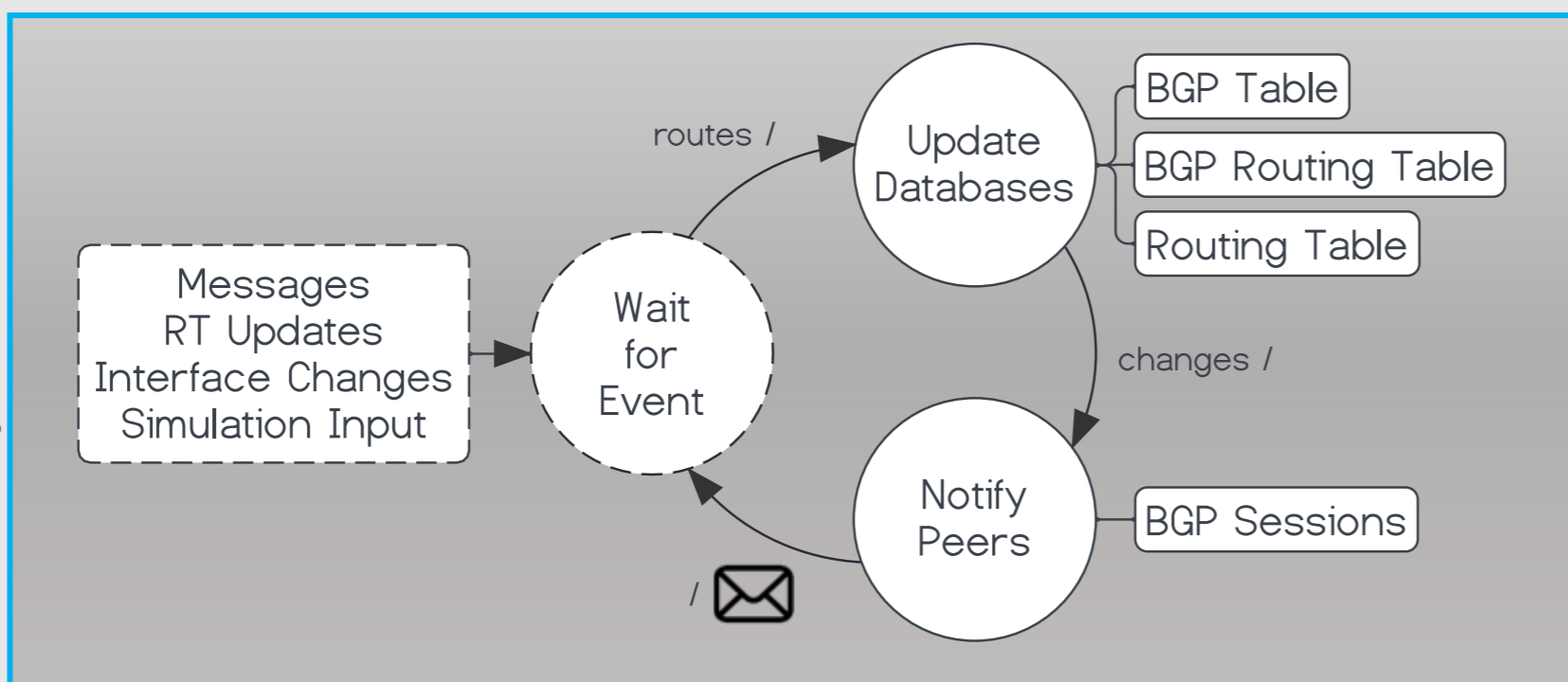
- Over 900K FIB IPv4 prefixes and growing
- Over 110K of Autonomous Systems

Open-source simulator **OMNeT++** is a safe and risk-free environment to conduct experiments in.

It's **scalable**, **transparent** and **inexpensive**.



Redesign



OMNeT++ can be extended with INET framework, and together they can be used to simulate BGP network behaviour

HOWEVER
BGP4 implementation in INET is missing a lot of important features!

Implementation



Testing



Features	Version 1	Version 2	My Version
Cisco-like Configuration	X	✓	✓
IPv4	✓	✓	✓
IPv6	X	✓	✓
Independent on OSPF	X	✓	✓
UPDATE messages with multiple NLRIs	X	X	✓
UPDATE messages with Withdrawn routes	X	✓	✓
NOTIFICATION message	X	X	✓
BGP Table	X	X	✓
Stop/Crash/Start Handlers	X	X	✓
TCP Closed Handler	X	✓	✓
Interface State Changed Handler	X	X	✓
Routing Table Changed Handler	X	X	✓
Local Pref Attribute	X	X	✓
MED Attribute	X	X	✓

Results

BGP Routing Tutorials for OMNeT++ Community