KEYSIGHT

Open Tools for Automated and Scalable Network Testing

AutoCon4 WS:A4
Austin, November 17, 2025

A Brief History of Keysight

KEYSIGHT
+
ixia

1939–1998:
Hewlett-Packard years

1999–2013:
Agilent Technologies years

2014+:
Keysight years

2017:
Keysight acquires Ixia

Keysight Network Test Team

Manodipto Ghose (Mano)
Sr. Product Manager

Ashwin Joshi
Sr. Solution Engineer

Octavian Petre (Octav)
Sr. Professional Services Engineer

Network Testing

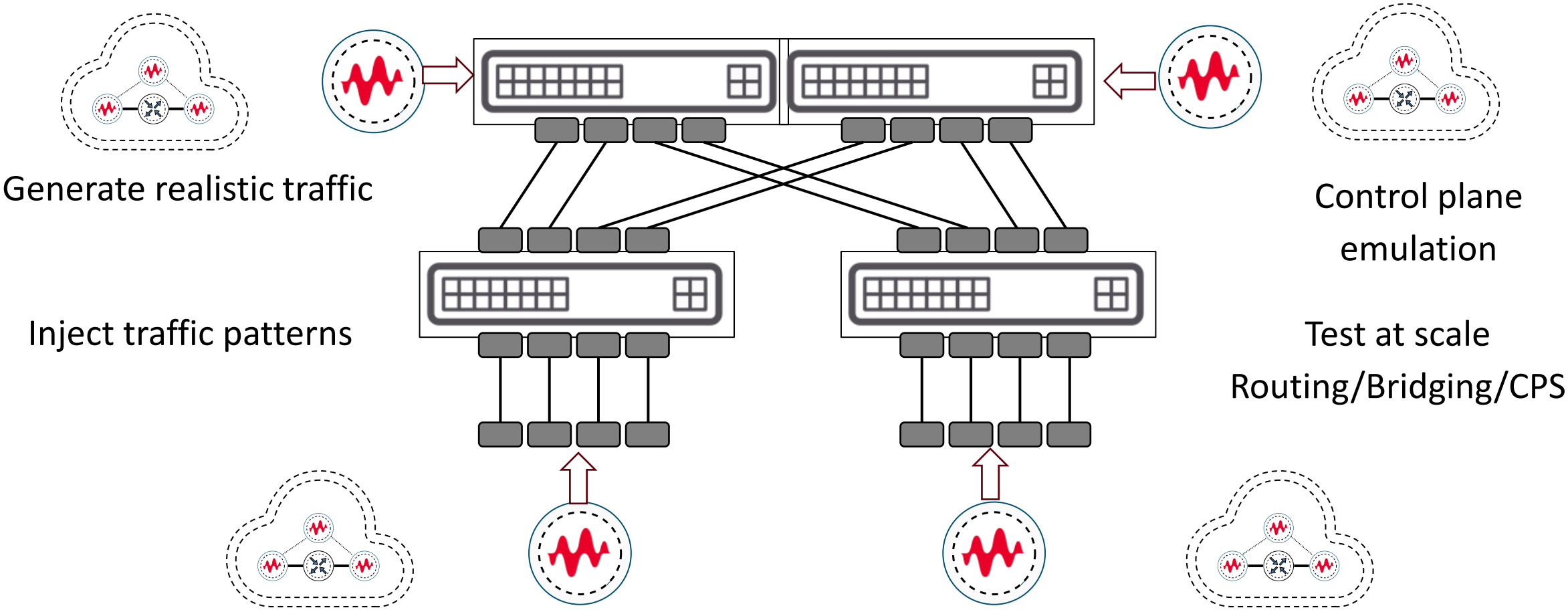
MYTH

- Testing is for QA not for network operators
- Testing is too expensive and time consuming
- Traffic generators are a no go in my environment
- I need to build a lab infra to replicate our production network

FACT

- Networks breaking in production is significant revenue loss
- Smart and virtualized testing is optimized for everyone
- Traffic generators are built to fit all environments and requirements
- Traffic generators can also emulate your network to test in emulation

Traffic generator : What and Why



Some popular network test tools

IxNetwork

Flagship L23 protocol emulation and traffic generator tool

OTG/KENG

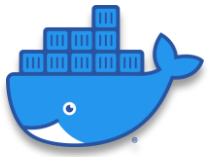
An API based approach to standardize traffic generators

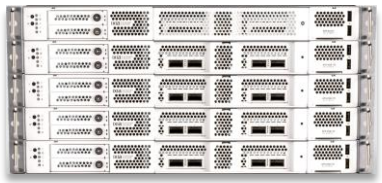
CyPerf

Application and security traffic profiles

KAI DC builder

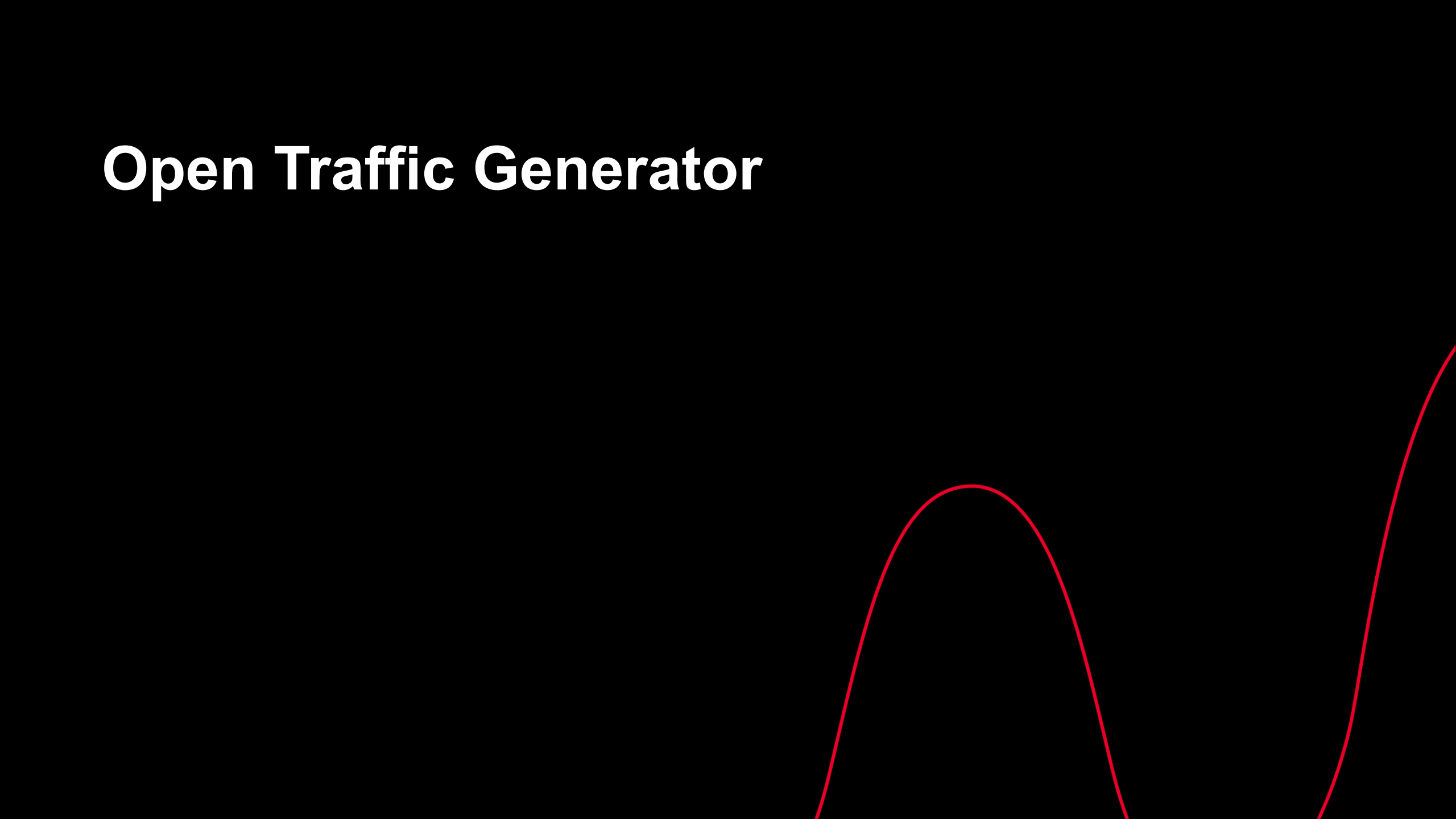
Keysight AI datacenter builder





VM/ containers | Hardware | Cloud

Open Traffic Generator



Open Traffic Generator (OTG)



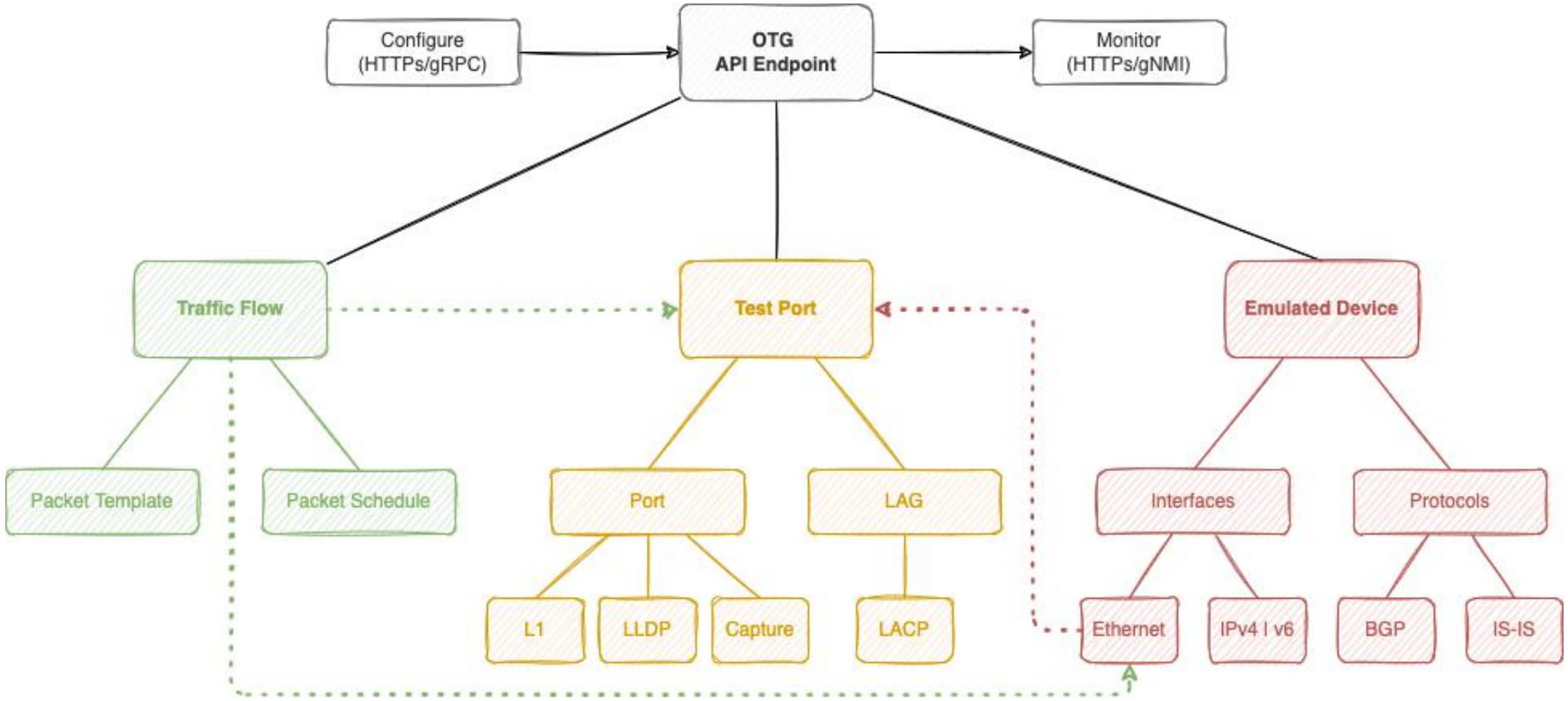


Model-based | Vendor Neutral | Open-API | Use-case driven | Community

Visit https://ixia-c.dev/ and get involved

What – OTG Model

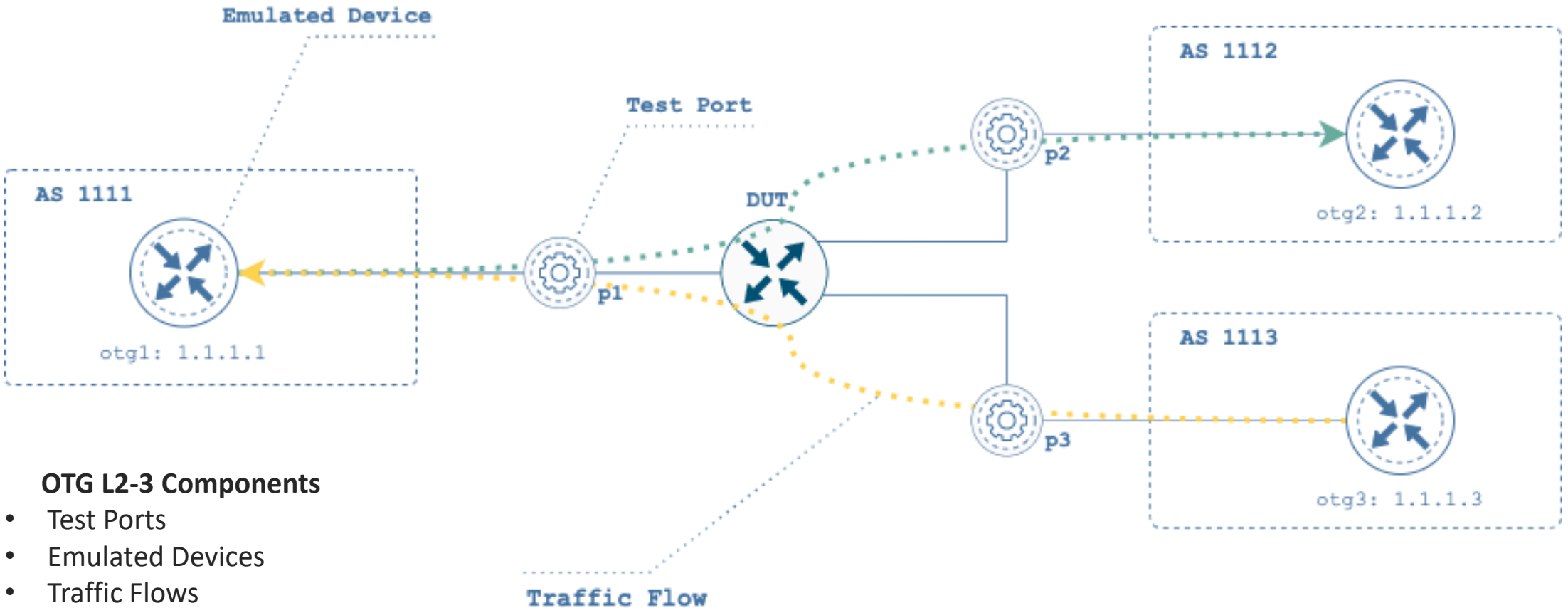
https://otg.dev



OTG L2-3 Model Hierarchy

What – OTG API

https://otg.dev

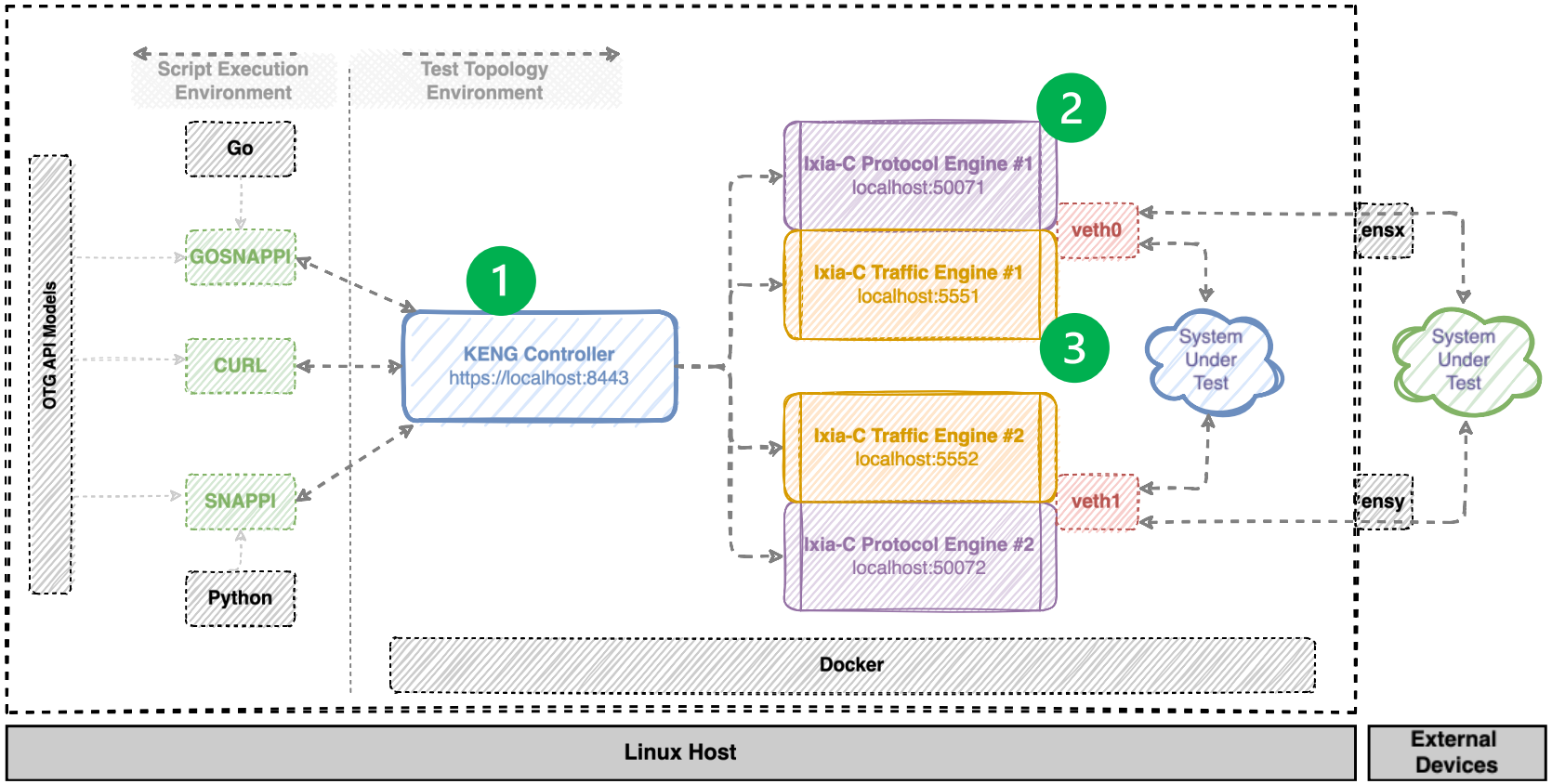


OTG L2-3 Components

- Test Ports
- Emulated Devices
- Traffic Flows

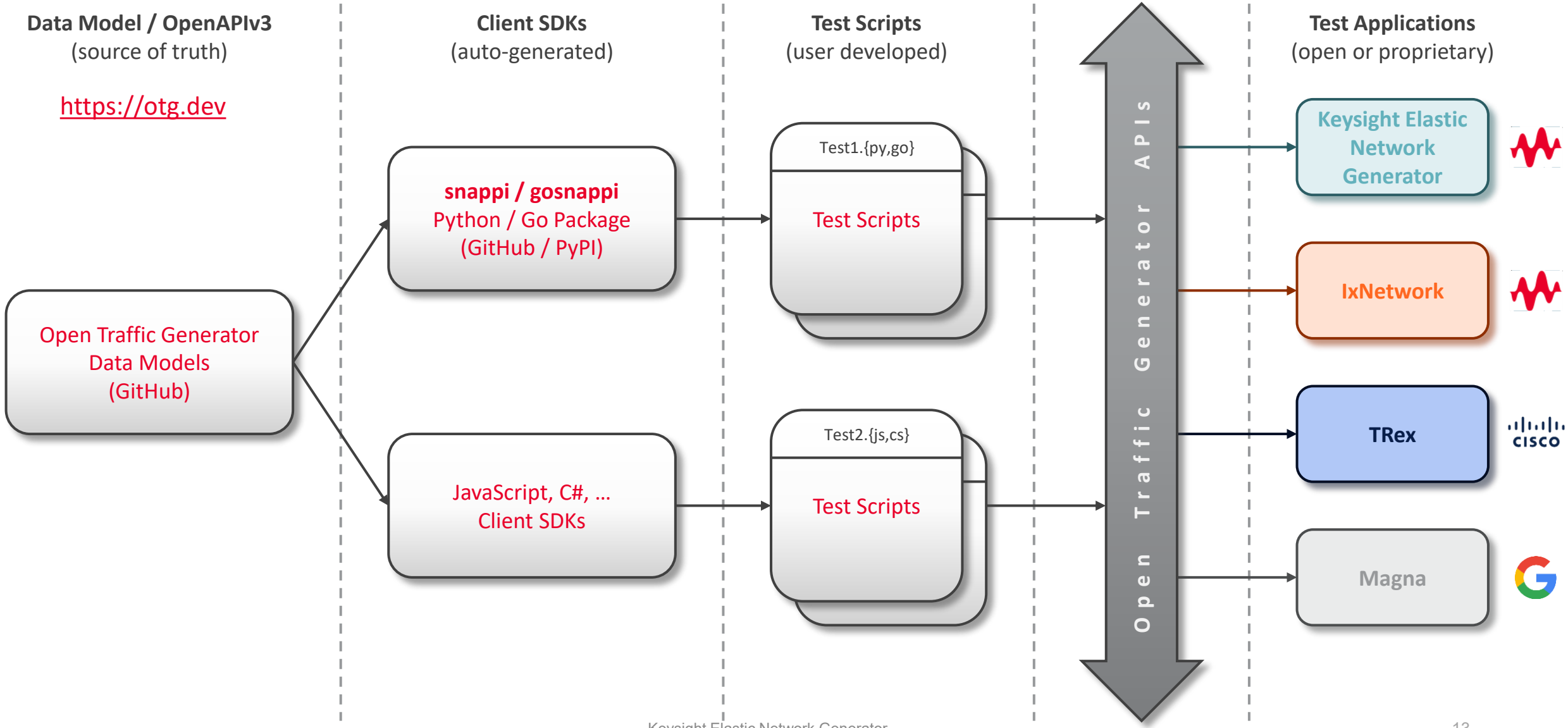
OTG Components

Building blueprint

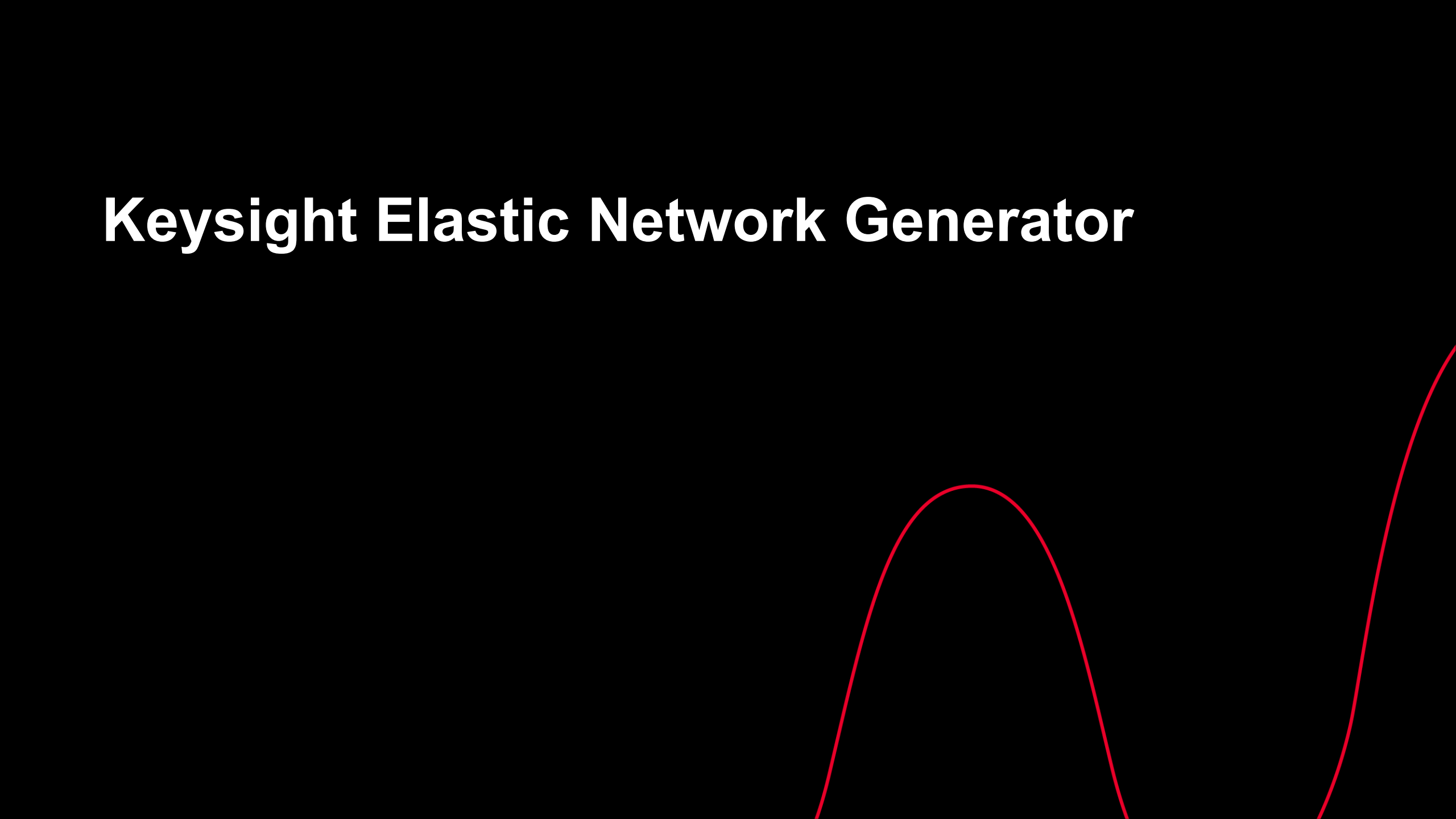


1. KENG Controller: The brain which manages all the components
2. Ixia-c protocol engine: Control plane emulation (BGP, ISIS etc.)
3. Ixia-c traffic engine: Data plane, traffic flows etc.

Open Traffic Generator API

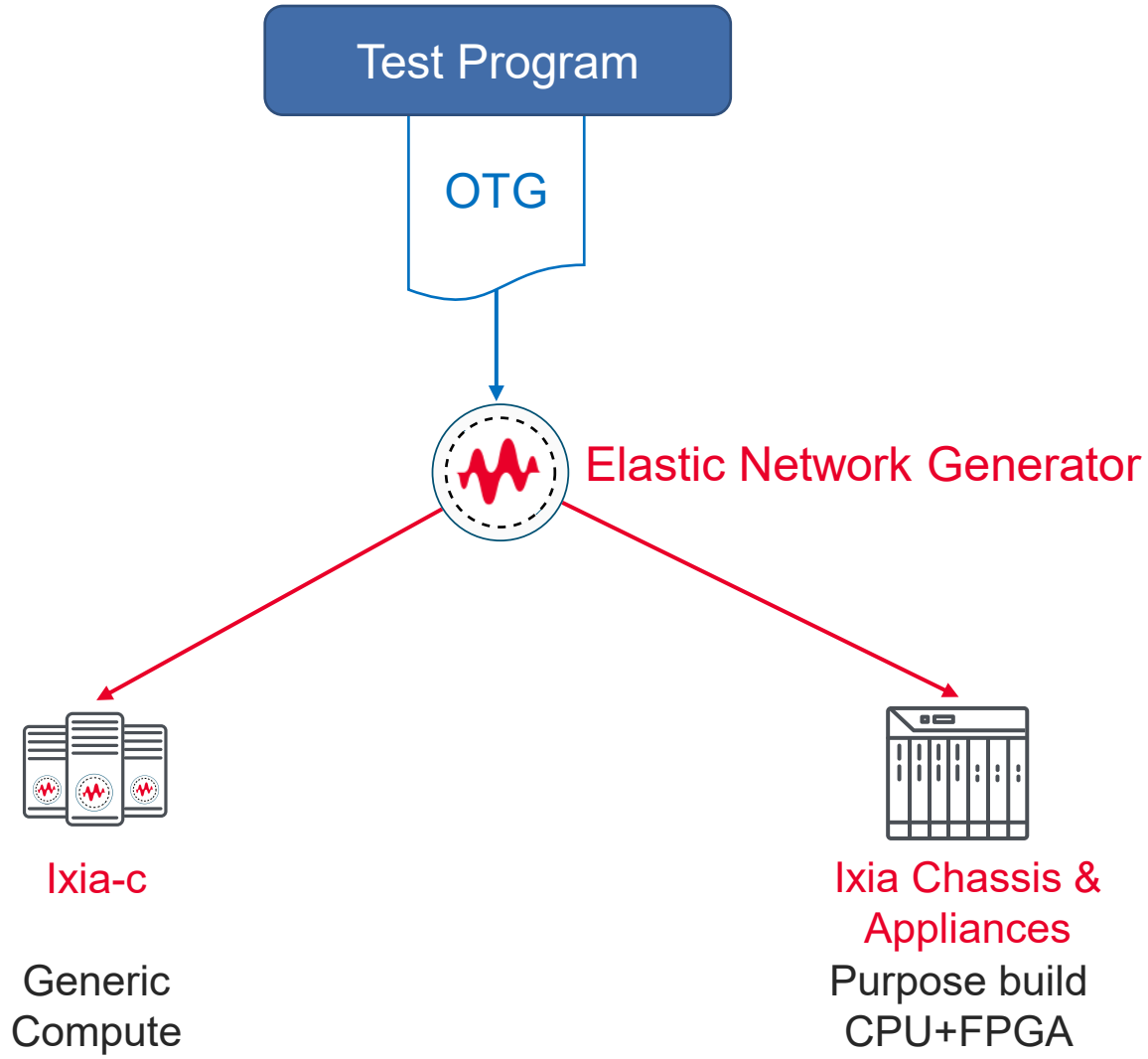


Keysight Elastic Network Generator



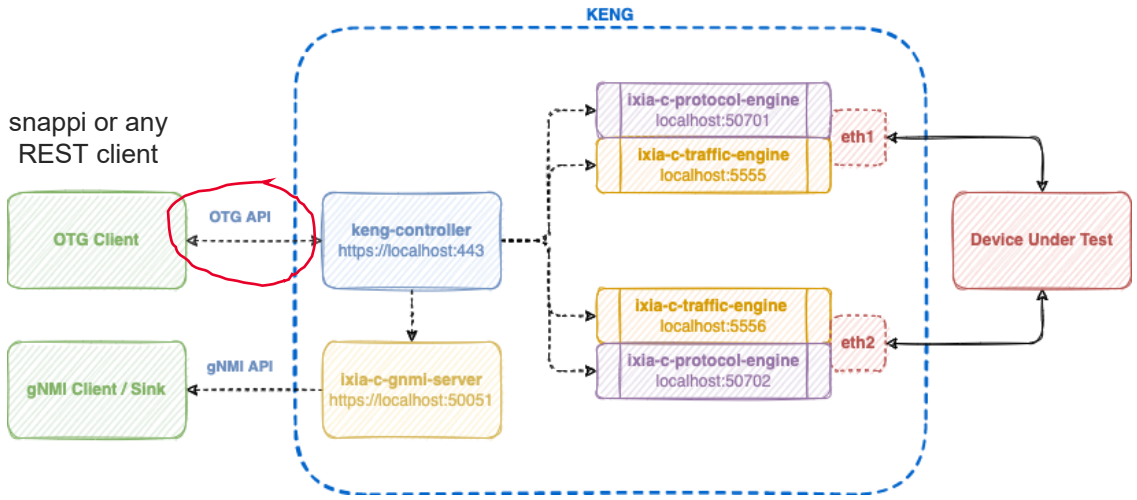
Keysight Elastic Network Generator

- Keysight OTG UX
- User-facing API Endpoint
- Write test once, run anywhere

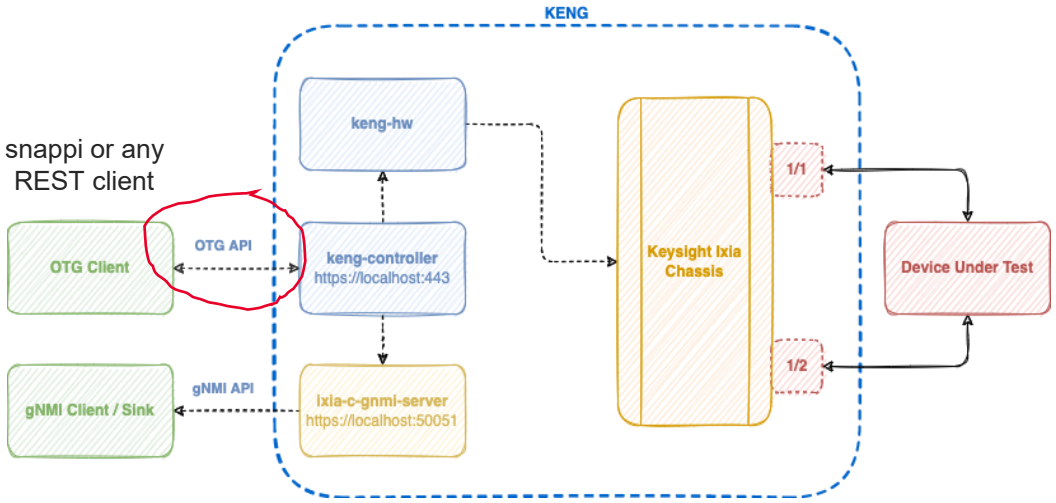


OTG Components continued

Different implementations of OTG



OTG implementation in Ixia-c SW

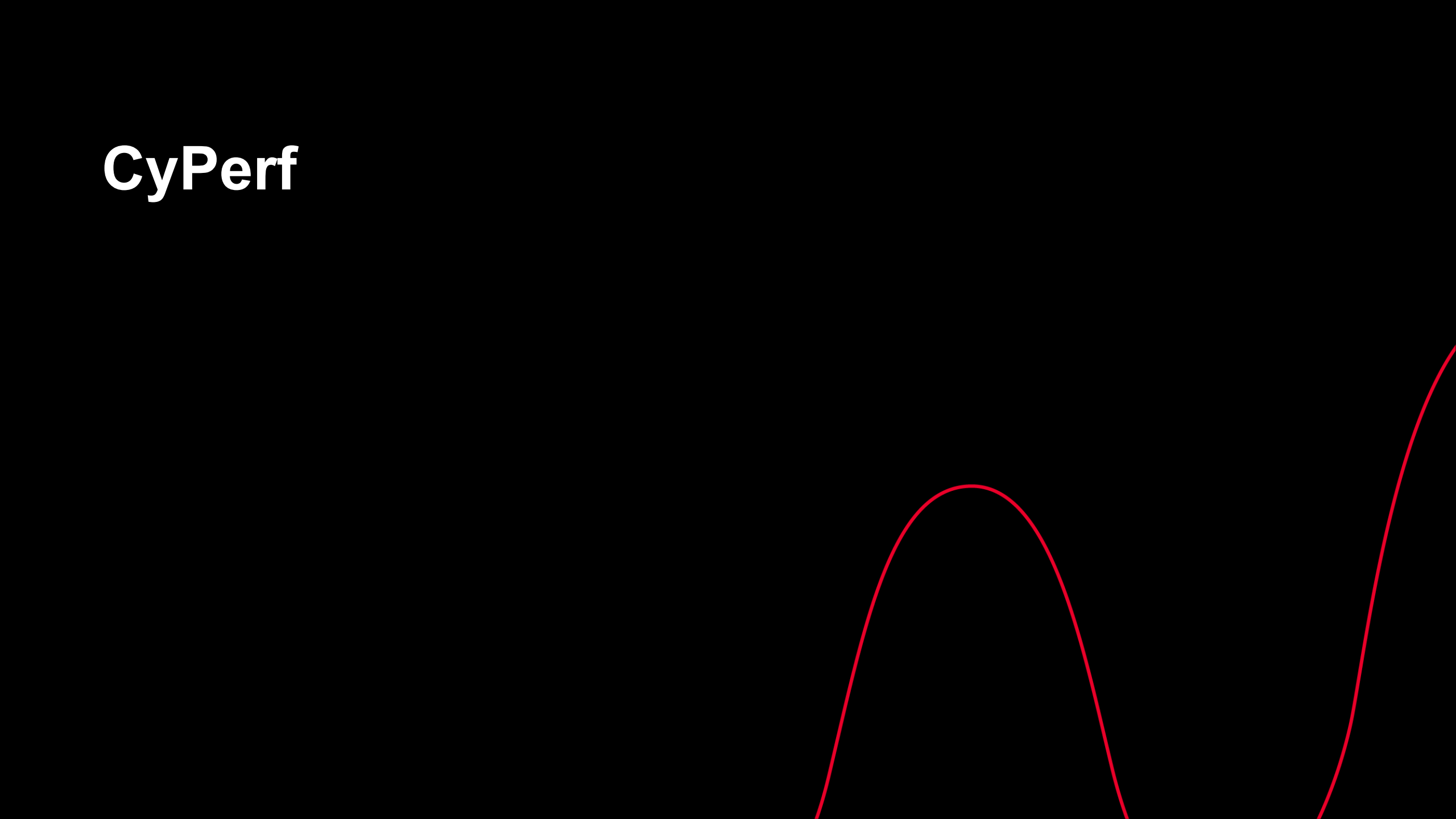


OTG implementation to Ixia HW

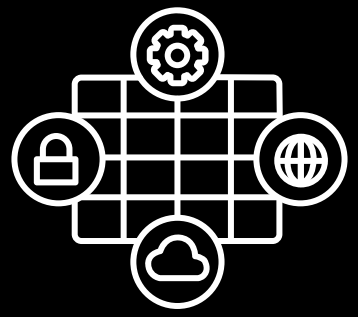
KENG/OTG learning path

- Docs: https://ixia-c.dev/
- OTG GitHub Repository: https://github.com/open-traffic-generator
- Hands on learning exercises: https://github.com/open-traffic-generator/ac2-workshop
- OTG Examples: https://github.com/open-traffic-generator/otg-examples
- Quick start with Ixia-c: https://github.com/open-traffic-generator/conformance
- Labs (with deployments on different environments):
  - B2B Ixia-c Traffic
  - Static B2B LAG
  - B2B IxOS Hardware
  - More labs: https://github.com/open-traffic-generator/otg-examples#reference
- Ixia-c Slack channel: https://join.slack.com/t/ixia-c/shared_invite/zt-2p11e5yua-u3o1aWzlJcjJquSAqoDk2Q

CyPerf

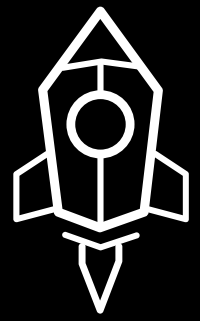


The CyPerf Advantage

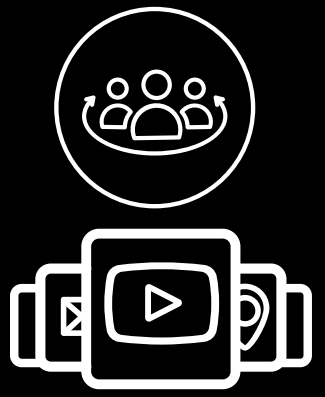


Installable in a Wide Variety of Environments

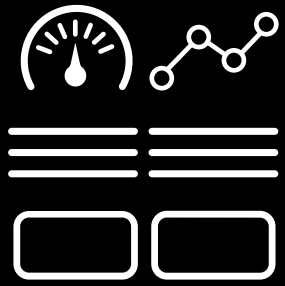
(VM, Docker, Cloud, Off-the-Shelf)



Highly Performant and Scalable



Realism of Application and Security Traffic



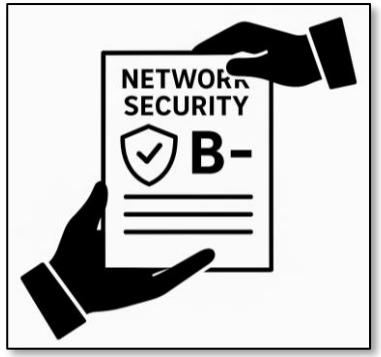
Summary and Detailed statistics

Advantages of CyPerf's Traffic Emulation

Network Operators use cases

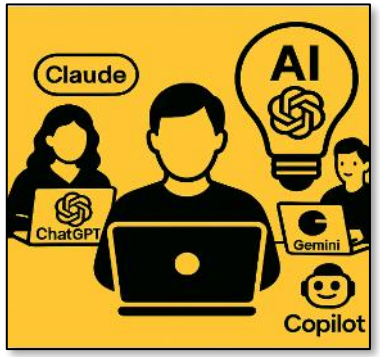
Quantifying **Network Latency** characteristics, choke points, user QoE

Validating Infrastructure Resilience Against complex **Application Workloads**

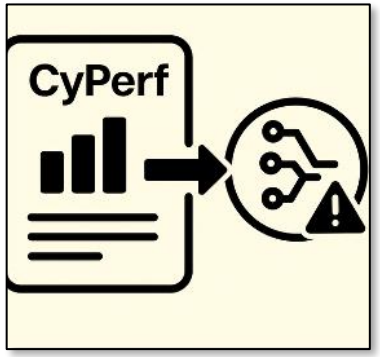


Safely Validating **Network Security** Postures

Validating Network Scale by Emulating **User Scale and traffic Concurrency**

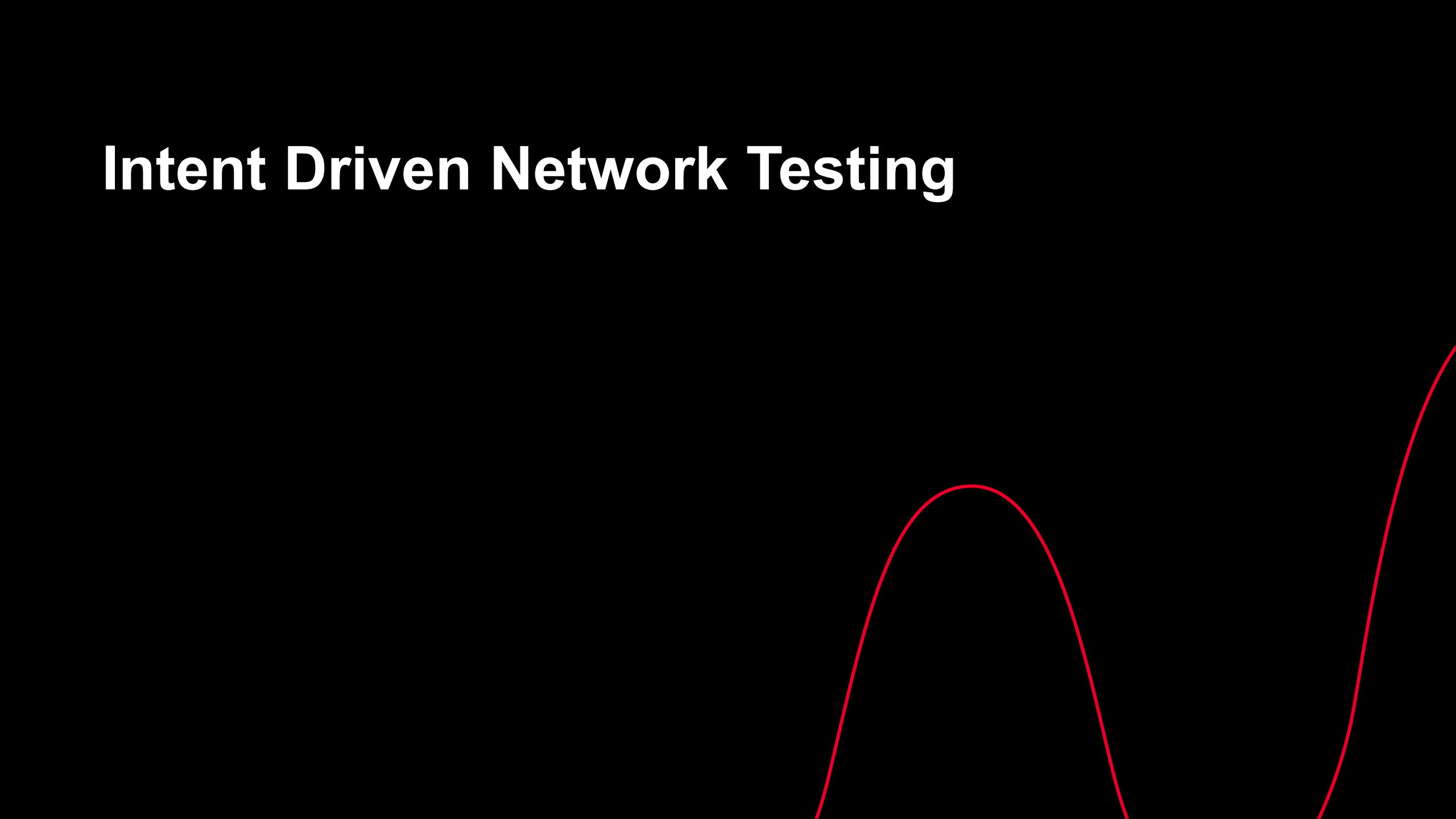


Validating **network readiness for new AI i**nferencing and security workloads



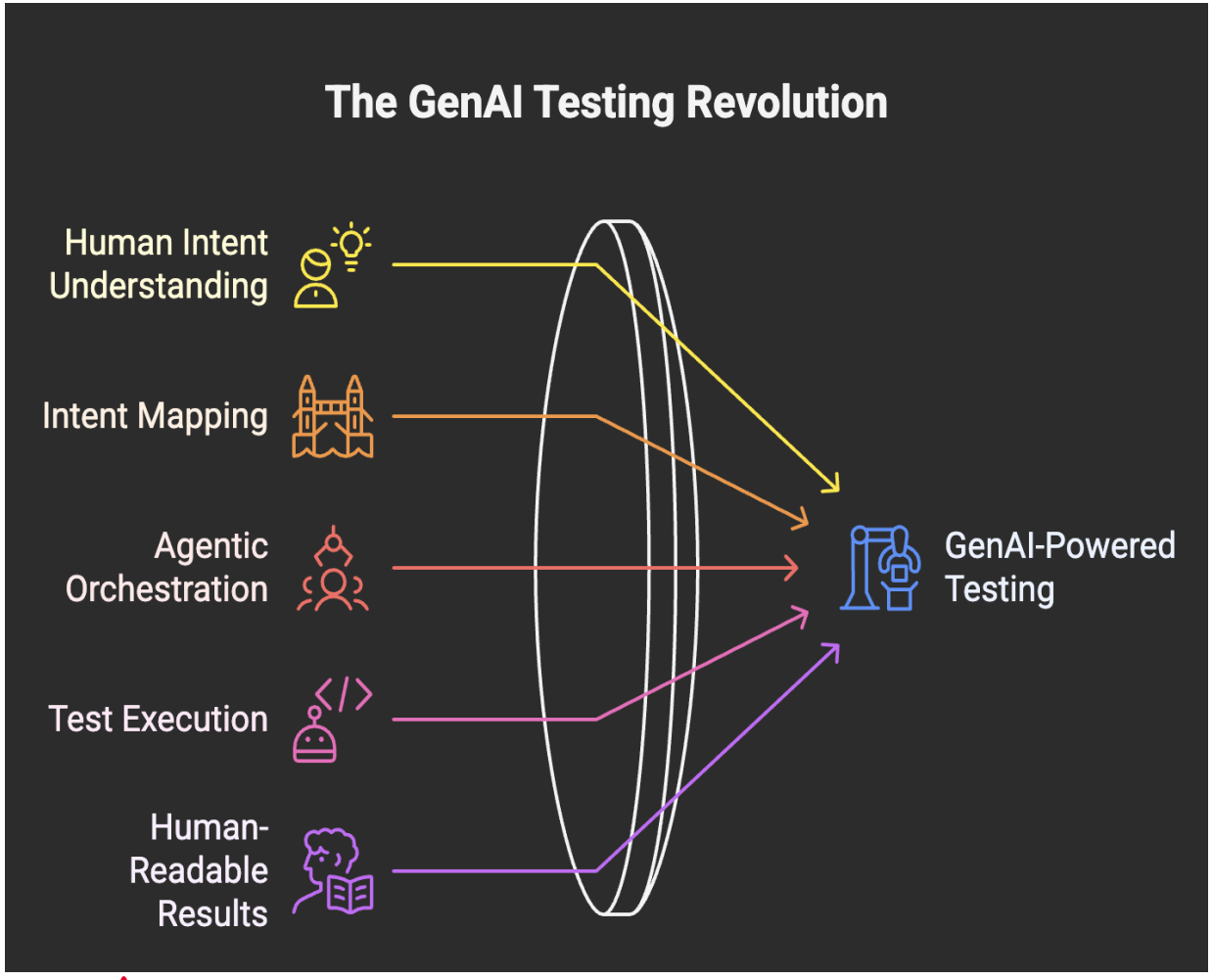
Statistics that point to Issues

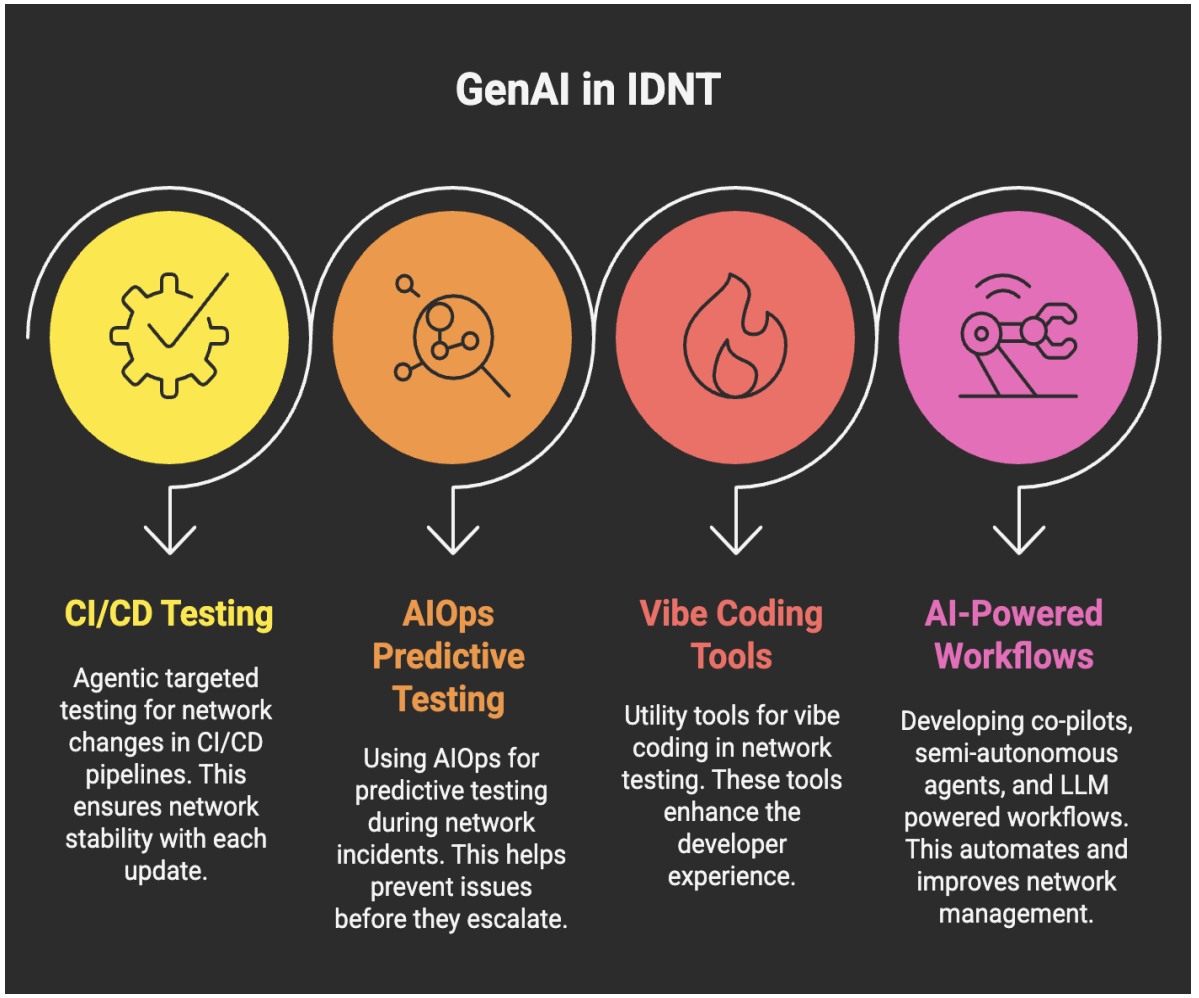
Intent Driven Network Testing



Intent-Driven Networking Testing (IDT) - Automating Assurance for the Network of Tomorrow

You tell the system *what outcome* you want to validate (the intent), and the AI-driven system automatically translates it into the *how* — test design, traffic generation, execution, and analysis.





Demo's

Community Contribution to ID Network Testing Community.

- OTG MCP Server developed by @Hugo Tinoco from AWS
- Gemini-CLI Powered L23 Testing with Keysight's IxNetwork by @Ashwin Joshi
- Cyperf – CE MCP Server by @Ashwin Joshi
- IxNetwork MCP Server by @Ashwin joshi

In summary…

Product	Community edition	Commercial edition
Keysight Elastic Network Generator (KENG)	Open Traffic Generator	KENG
Keysight CyPerf	CyPerf Community Edition	CyPerf

- Join OTG conversation: https://join.slack.com/t/ixia-c/shared_invite/zt-3in3jg0eq-xmz9Tfw0lQmhMuNvpNiNBA

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