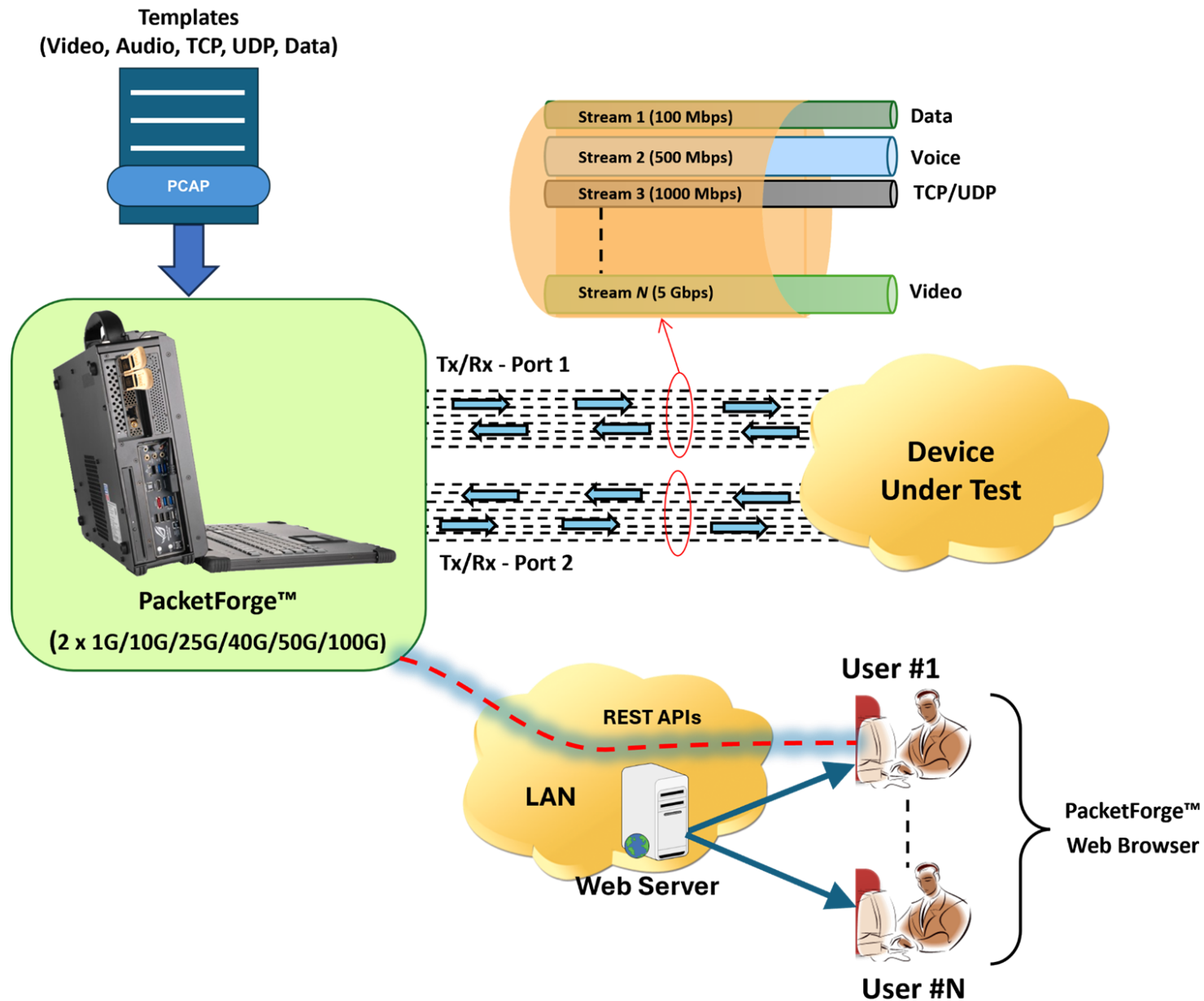

High-Performance Network Traffic Generator

PacketForge™ - Upto 100Gbps



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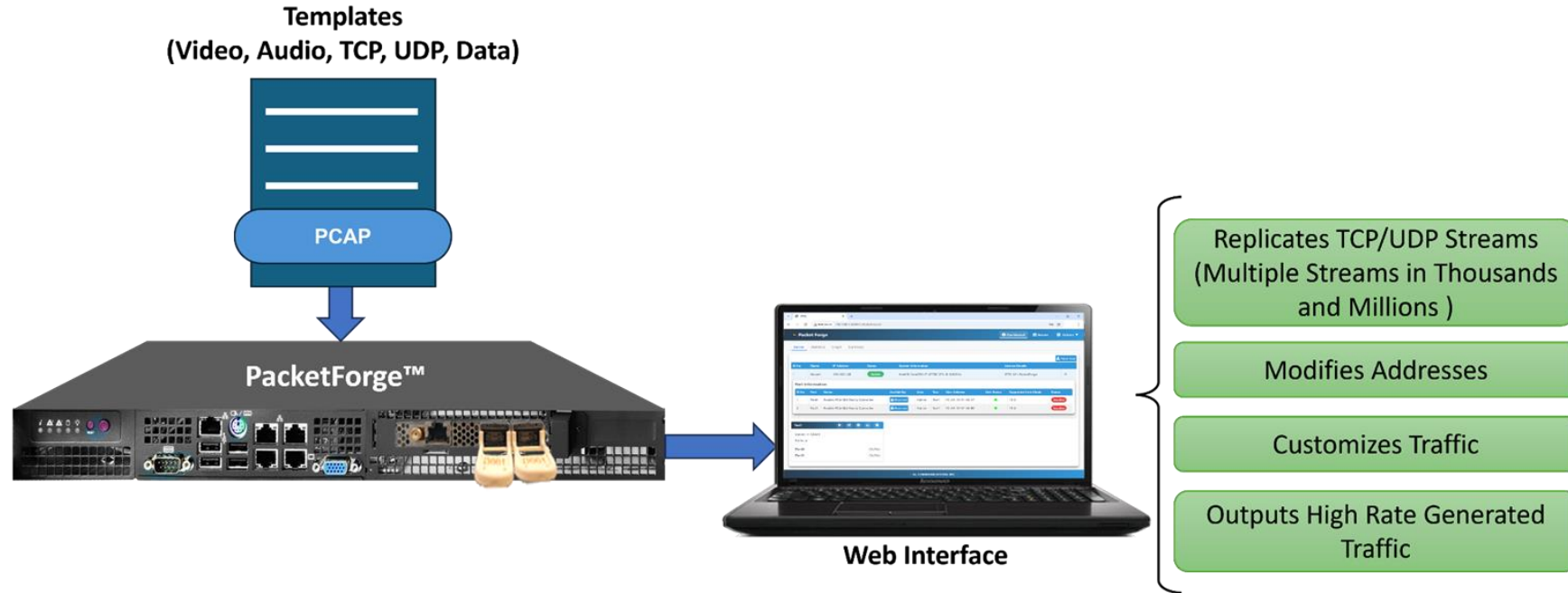
PacketForge™



Key Features

- Simulates hundreds of thousands concurrent flows at line rate
- Delivers high-performance traffic generation at 10G–40G line rates
- Supports Ethernet, IPv4/IPv6, TCP, UDP, RTP, VoIP, HTTP, DNS, streaming, 5G, and custom workloads
- Configure, monitor, and analyze tests directly through a clean web dashboard
- Monitor latency, packet loss, throughput, and per-stream/session statistics via interactive dashboards
- Full REST API support for regression testing and orchestration environments.
- Incremental, random, or masked addressing with fine-grained control over rates and flows
- Centrally manage distributed setups with role-based access and fairness control
- Build traffic from PCAP templates or custom-defined streams
- Intuitive, responsive GUI accessible from desktop and tablets—no local installation required
- Define custom burst patterns, ramp-up/ramp-down, or sustained load testing
- Role-based permissions for multi-user environments in labs or enterprises

PacketForge™ - Working Principle



- Uses a **PCAP file** as a base template to generate realistic, large-scale traffic streams
- Replicates a single PCAP into **thousands of TCP/UDP flows**, both **stateful and stateless**, at full line rate
- Allows customization of **transmission rate, inter-frame gap (IFG), and frame size** to emulate real network conditions (congestion, jitter, burst)
- Supports **dynamic addressing modes** — incremental, random, or masked to create millions of unique flows
- Powered by **SmartNIC hardware acceleration**, supporting speeds from **10G to 40G**
- Provides **real-time performance analysis** (packet loss, latency, jitter, throughput) per stream/session
- Includes a **browser-based dashboard** with interactive graphs and detailed reports

PacketForge™ Dashboard

- Provides a **user-friendly** dashboard with intuitive navigation for server management, statistics, and test summaries
- Displays **real-time server details**, port status, and link availability in well-organized tables
- Offers **quick-access controls** for easy test setup, execution, and monitoring

The screenshot displays the Packet Forge Dashboard interface. At the top, the 'Packet Forge' logo is on the left, and navigation links for 'Dashboard', 'Server', and 'Admin' are on the right. The 'Server' tab is selected, showing a sub-menu with 'Server', 'Statistics', 'Graph', and 'Summary'. A 'New Test' button is in the top right corner of the main content area.

The main content area features a table with the following data:

SI No	Name	IP Address	Status	System Information	License Details
1	Server2	192.168.1.77	Active	Intel(R) Core(TM) i7-4770 CPU @ 3.40GHz	IPTG-101: PacketForge

Below this table is a 'Port Information' section with another table:

SI No	Port	Name	Availability	User	Test	Mac Address	Link Status	Supported Link Mode	Status
1	Port0	NT100A01-01-SCC-4x10	Reserved	Admin	-	FC-AA-14-91-56-AF	●	10 G	Active
2	Port1	NT100A01-01-SCC-4x10	Reserved	Admin	-	FC-AA-14-91-56-B0	●	10 G	Active
3	Port2	NT100A01-01-SCC-4x10	Available		-	FC-AA-14-91-56-B1	●	10 G	Inactive
4	Port3	NT100A01-01-SCC-4x10	Available		-	FC-AA-14-91-56-B2	●	10 G	Inactive

At the bottom, there is a 'Test1' section with controls for a test setup:

Test1 [Stop] [Refresh] [Delete]

Server ↔ Client

Ports: 2

Port0 (Tx/Rx)

Port1 (Tx/Rx)

Test Configurations

- **User-friendly** modal to edit test name and endpoint names
- **Port details display** MAC address, link status with color indicators, and selectable Tx/Rx mode
- **Add/remove** controls for easy port management
- **Organized layout** with input fields, dropdowns, and **Update Test** button for quick setup

Edit Test Configuration

Test Name

Test1

End point 1 Name

Server

End point 2 Name

Client

Port	MAC Address	Link Status	Mode	Add/Remove
Port0	FC-AA-14-91-56-AF		Tx/Rx	
Port1	FC-AA-14-91-56-B0		Tx/Rx	

Update Test

Port Configurations



DashboardServerAdmin

ServerSummary

Step 1
Port Configuration

Step 2
Stream Configuration

Step 3
Summary

Port Configuration for Test1

Port Id	Source MAC Address	Source IPv4 Address	Gateway	Link Speed	End Point Selection	Port Mapping	Edit
Server2/Port0	FC-AA-14-91-56-AF	192.168.1.1	192.168.1.1	10 G	Server	Server2/Port1	
Server2/Port1	FC-AA-14-91-56-B0	192.168.1.2	192.168.1.1	10 G	Client	Server2/Port0	

- Port Configuration lets users view and edit each port's settings including MAC, IP, link speed, and role quickly and efficiently
- Port table displays MAC address, IPv4, gateway, link speed, endpoint role, and port mapping for each port
- Dropdowns and mapping controls allow selecting link speed, endpoint roles, and defining traffic flow between server and client ports
- Edit buttons on each row enable quick modification of individual port settings

Stream Configurations

- The Stream Configuration section offers a structured interface to define and manage test streams with stream names and template selection



[Dashboard](#) [Server](#) [Admin](#) ▼

[Server](#) [Summary](#)

Step 1
Port Configuration

Step 2
Stream Configuration

Step 3
Summary

Stream Configuration

Server2/Port0-Server2/Port1 ▼

Test Stop Condition: Continuous ▼

+ Add TCP Stream

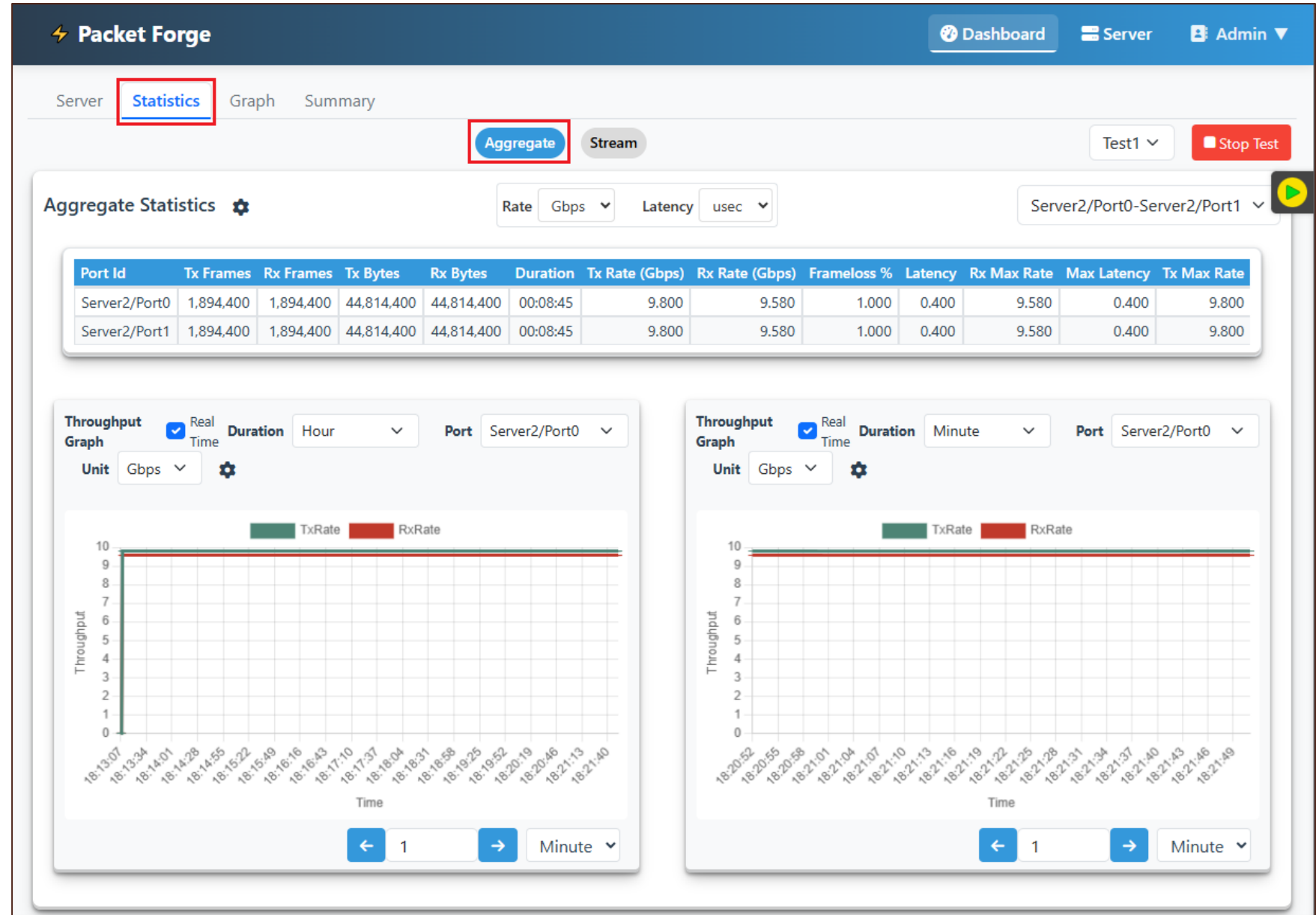
SL No	Stream Name	Template File	Framesize	Rate	Layer4 (TCP)	Max Available Sessions	Session Count
1 ☒	Stream 1	ChatGPT.pcap	AsPerFile ⚙	AsPerFile ⚙	Src: Fixed (80) Dst: Increment (80-1000) ⚙	123480309760	10000

+ Add UDP Stream

SL No	Stream Name	Template File	Framesize	Rate	Layer4 (UDP)	Max Available Sessions	Session Count
1 ☒	Stream 2	L4_2_20-UDP.pcap	AsPerFile ⚙	AsPerFile ⚙	Src: AsPerFile Dst: AsPerFile ⚙	268435456	50000

Aggregate Statistics

- Displays real-time performance metrics for all test ports
- Monitors **frames, bytes, test duration, data rates, and latency**
- Supports aggregate and stream views for quick port-by-port analysis



Stream Statistics

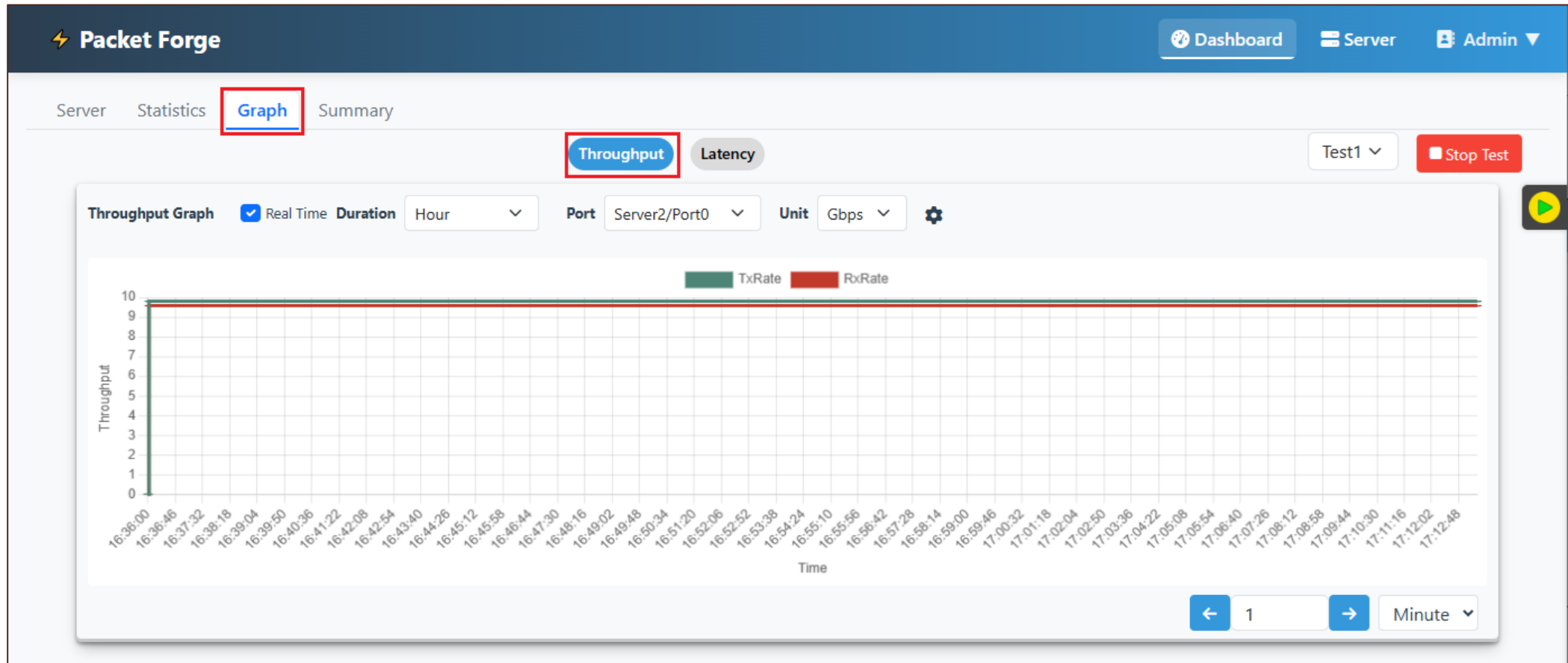
- Provides a streamlined web interface for detailed traffic analysis
- Displays metrics such as **port**, **stream ID**, **protocol (TCP/UDP)**, **frames**, **bytes**, **data rates**, **latency**, and **frameless** percentage

Stream Statistics

Port	Stream Name	Stream Type	Tx Frames	Rx Frames	Tx Bytes	Rx Bytes	Tx Rate (Gbps)	Rx Rate (Gbps)	Frameloss %	Tx Frames/Sec	Rx Frames/Sec	Latency
Server2/Port0	Stream 2	UDP	1,153,280	1,153,280	27,282,280	27,282,280	9.800	9.580	1.000	1,805	1,805	0.400
Server2/Port1	Stream 2	UDP	1,152,000	1,152,000	27,252,000	27,252,000	9.800	9.580	1.000	1,805	1,805	0.400
Server2/Port0	Stream 1	TCP	1,153,280	1,153,280	27,282,280	27,282,280	9.800	9.580	1.000	1,805	1,805	0.400
Server2/Port1	Stream 1	TCP	1,152,000	1,152,000	27,252,000	27,252,000	9.800	9.580	1.000	1,805	1,805	0.400

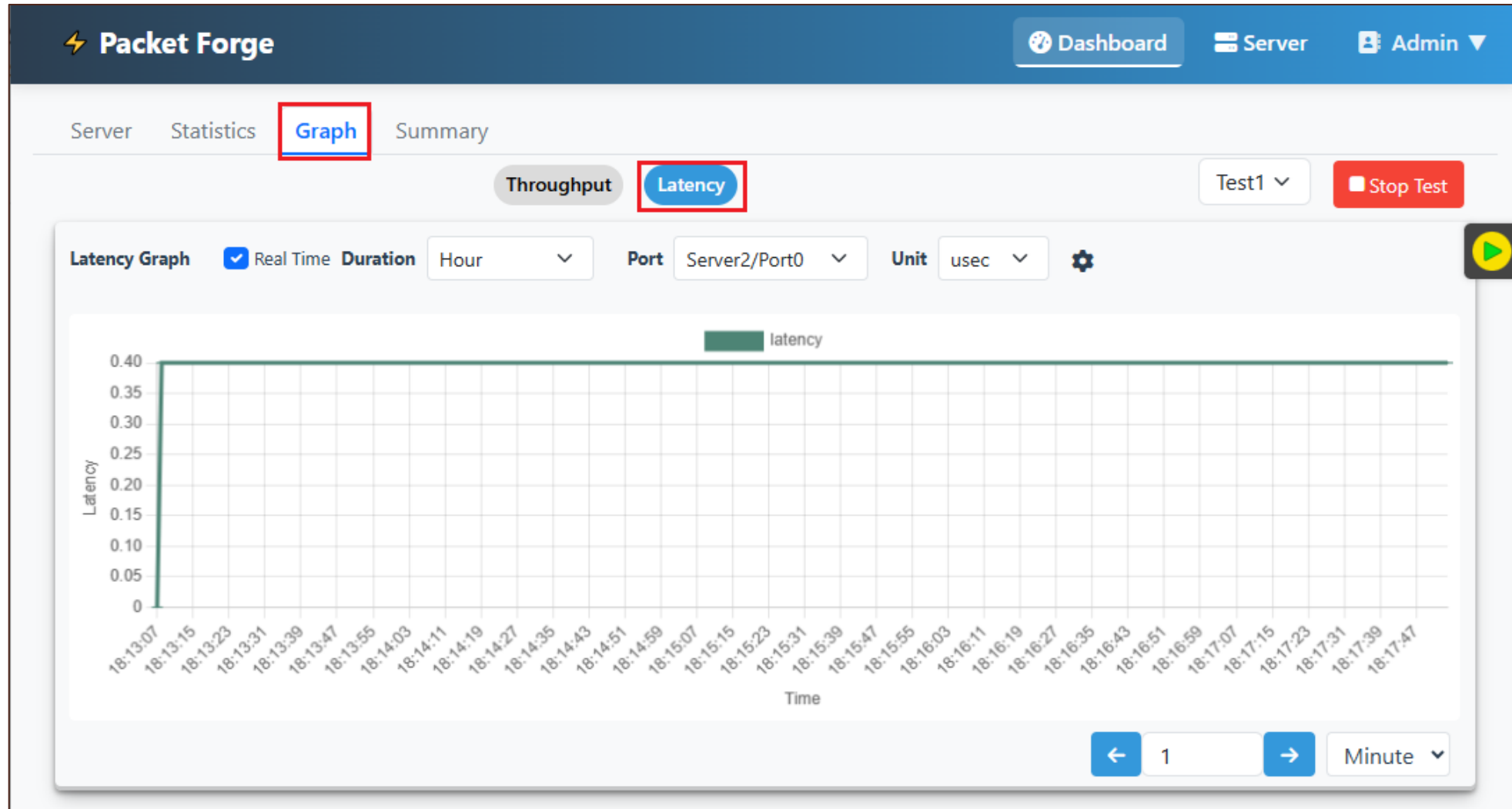
Throughput Graph

- Provides real-time throughput visualization with **Tx** and **Rx** rates over time
- Features a customizable line graph for clear performance tracking
- Allows selection of measurement units and duration windows



Latency Graph

- Provides **real-time visualization** of network latency across selected ports
- Displays latency over time in **milliseconds** or **microseconds**
- Enables quick monitoring and troubleshooting of latency issues



Configuration Summary

- Provides a concise overview of the current test configuration and stream setup
- Displays source and destination host details **MAC type/address**, **IPv4** info, gateway, and subnet mask
- Lists all configured **TCP** and **UDP** streams with template file, frame size, bandwidth, **Layer 4** mapping, and session count

Packet Forge Dashboard Server Admin

Server Statistics Graph **Summary** Test1

Summary Server2/Port0-Server2/Port1

	Source Host Address	Destination Host Address
MAC Address Type	Fixed	Fixed
MAC Address	FC-AA-14-91-56-AF	FC-AA-14-91-56-B0
IPv4 Address Type	SubnetMask (16384)	Increment ([0-255].[0-255].[1].[2] - 65536)
IPv4 Address	192.168.1.1/18	192.168.1.2
Gateway	192.168.1.1	192.168.1.1
Subnet Mask	255.255.255.0	-

Streams Configured

Stop Condition:	Continuous			
TCP Streams	1 configured			
Template File	Frame Size	Bandwidth Control	Layer4 (TCP)	Session Count
ChatGPT.pcap	As Per File	As Per File	Src: Fixed (80) Dst: Increment (80-1000)	10000
UDP Streams	1 configured			
Template File	Frame Size	Bandwidth Control	Layer4 (UDP)	Session Count
L4_2_20-UDP.pcap	As Per File	As Per File	Src: AsPerFile Dst: AsPerFile	50000

Thank you