High-Performance Network Traffic Generator PacketForge™ - Upto 100Gbps

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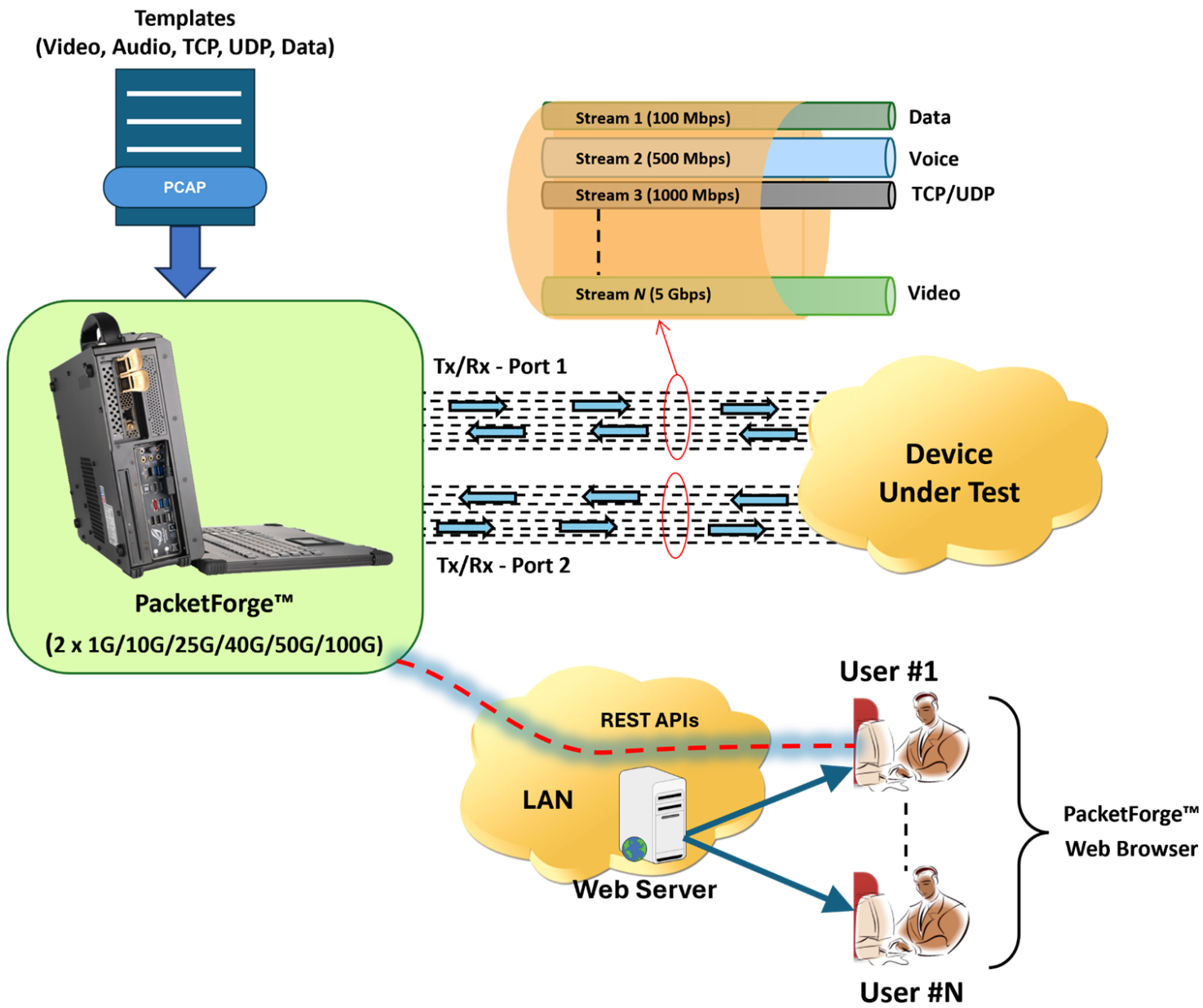
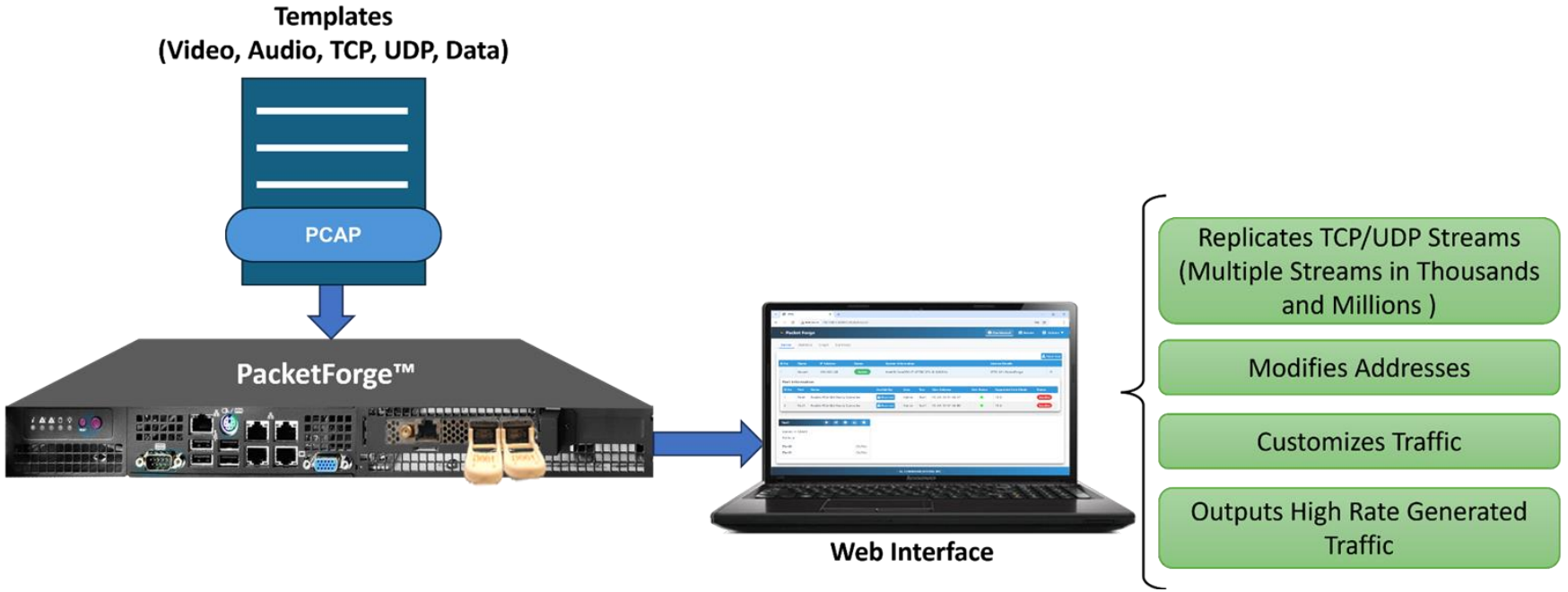
PacketForge™



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

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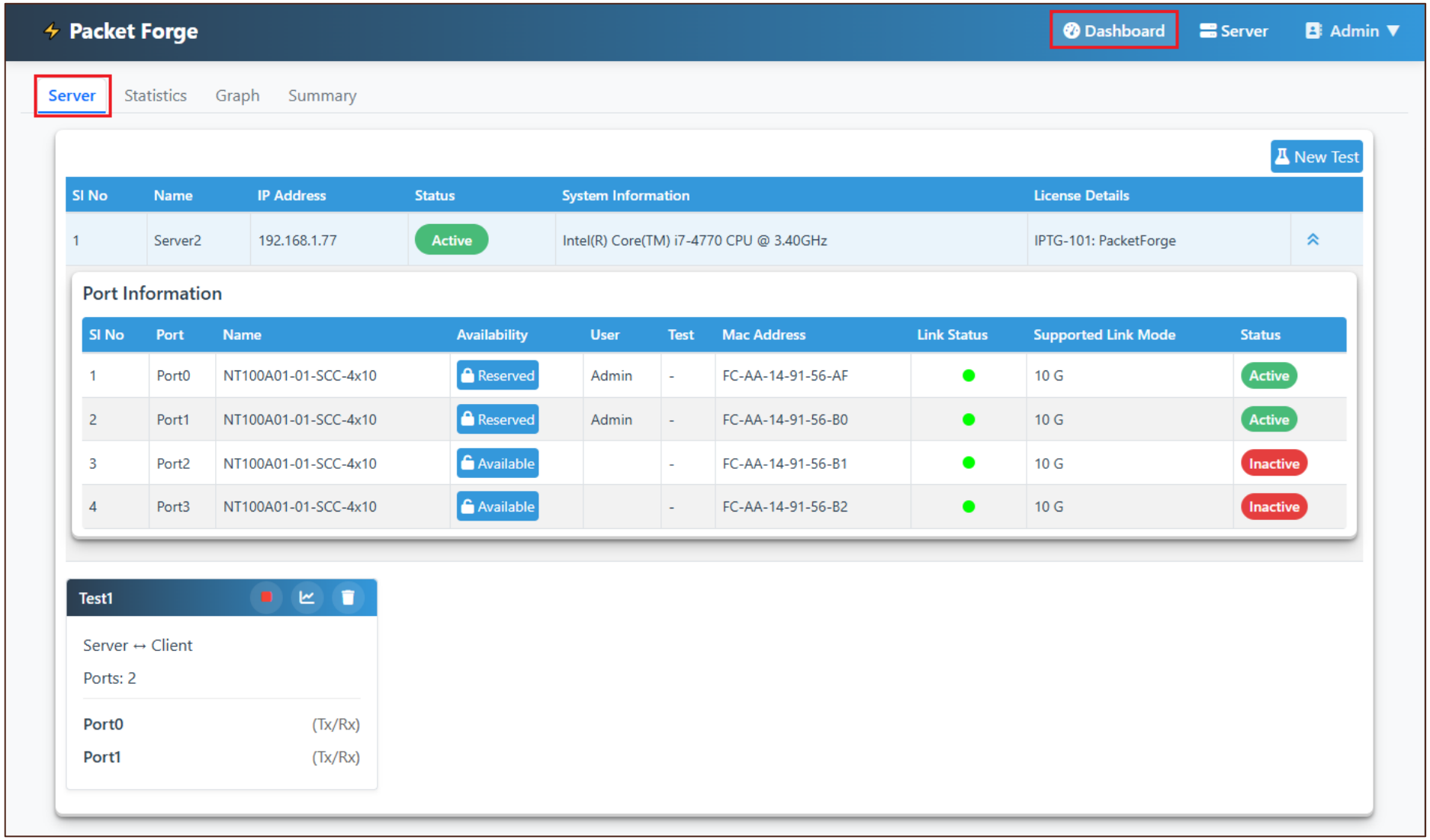
PacketForge™ Dashboard

- 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



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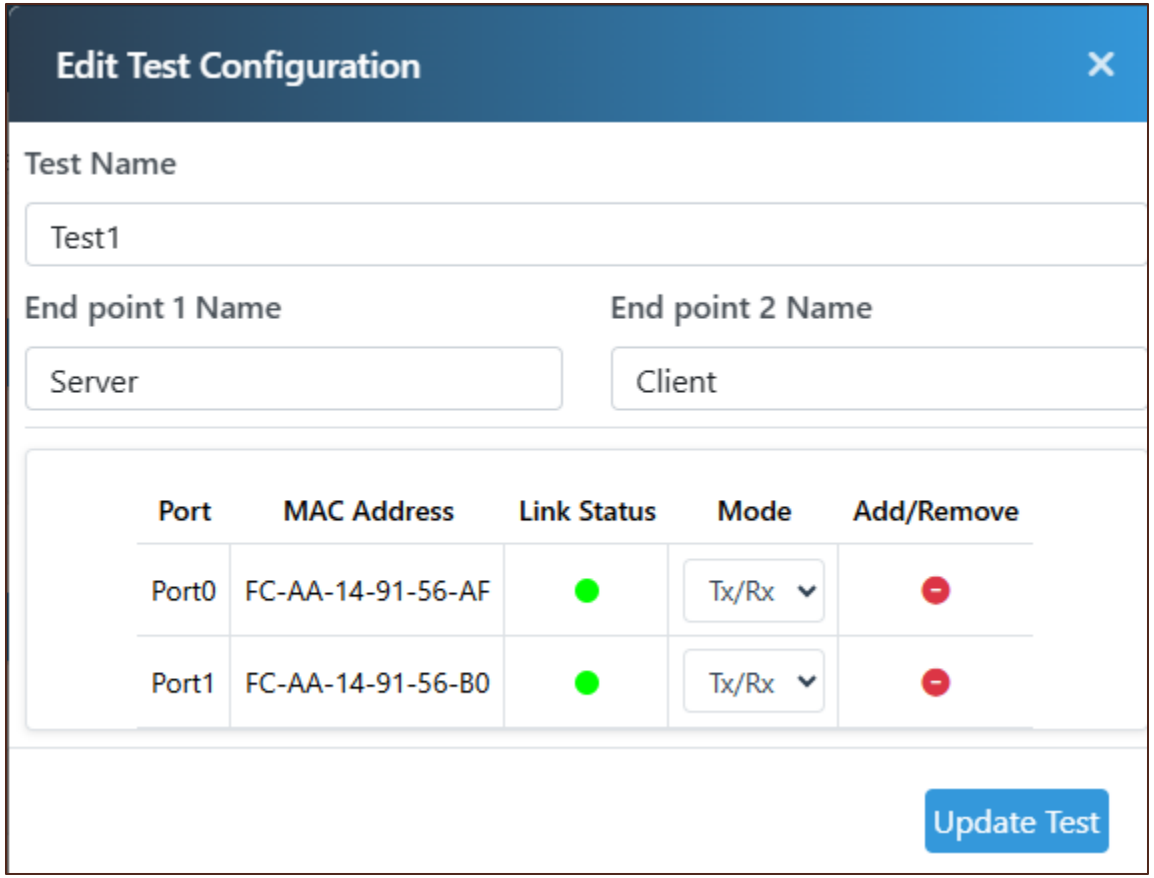
Test Configurations

- **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



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Port Configurations

- 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

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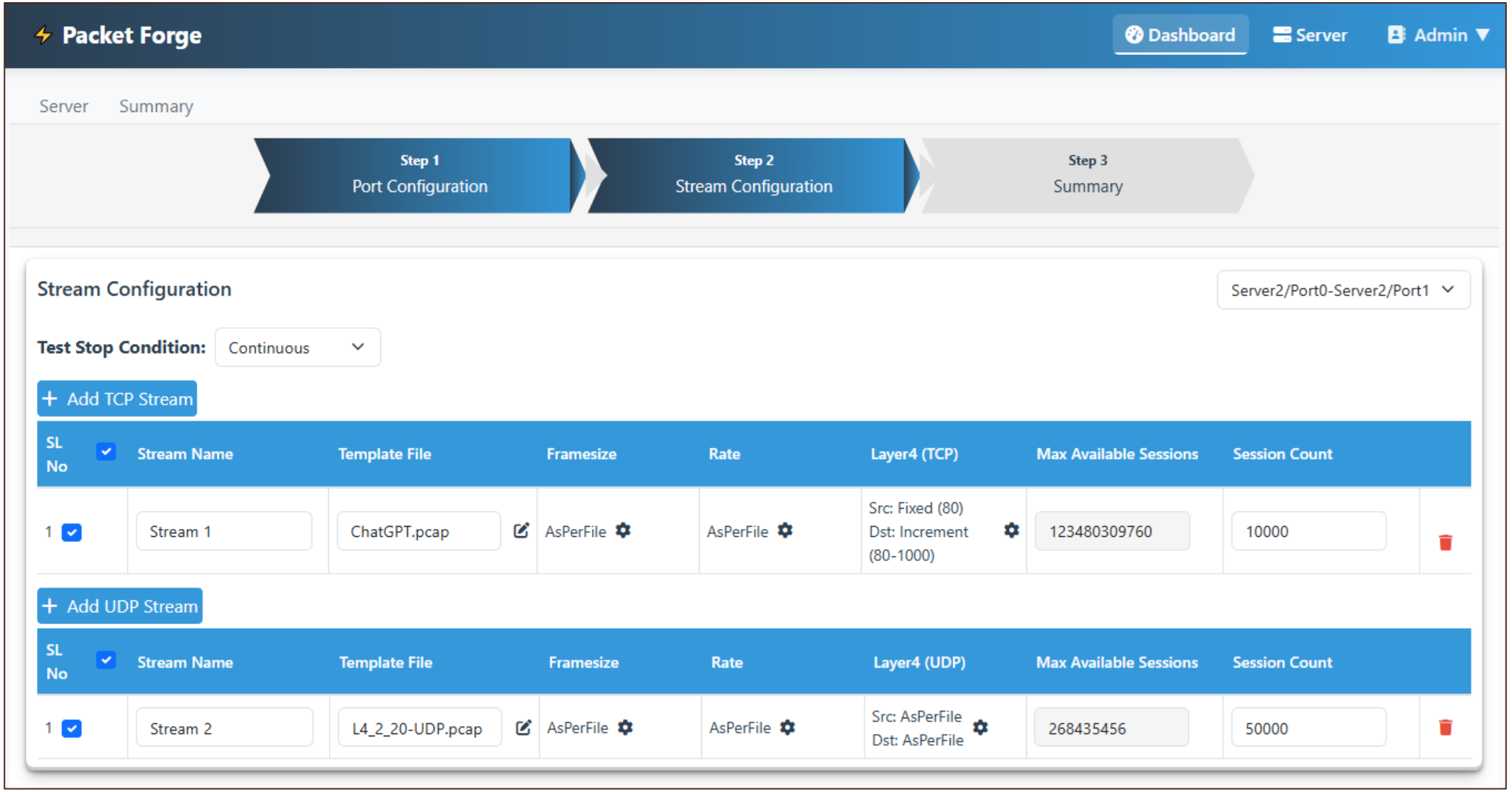
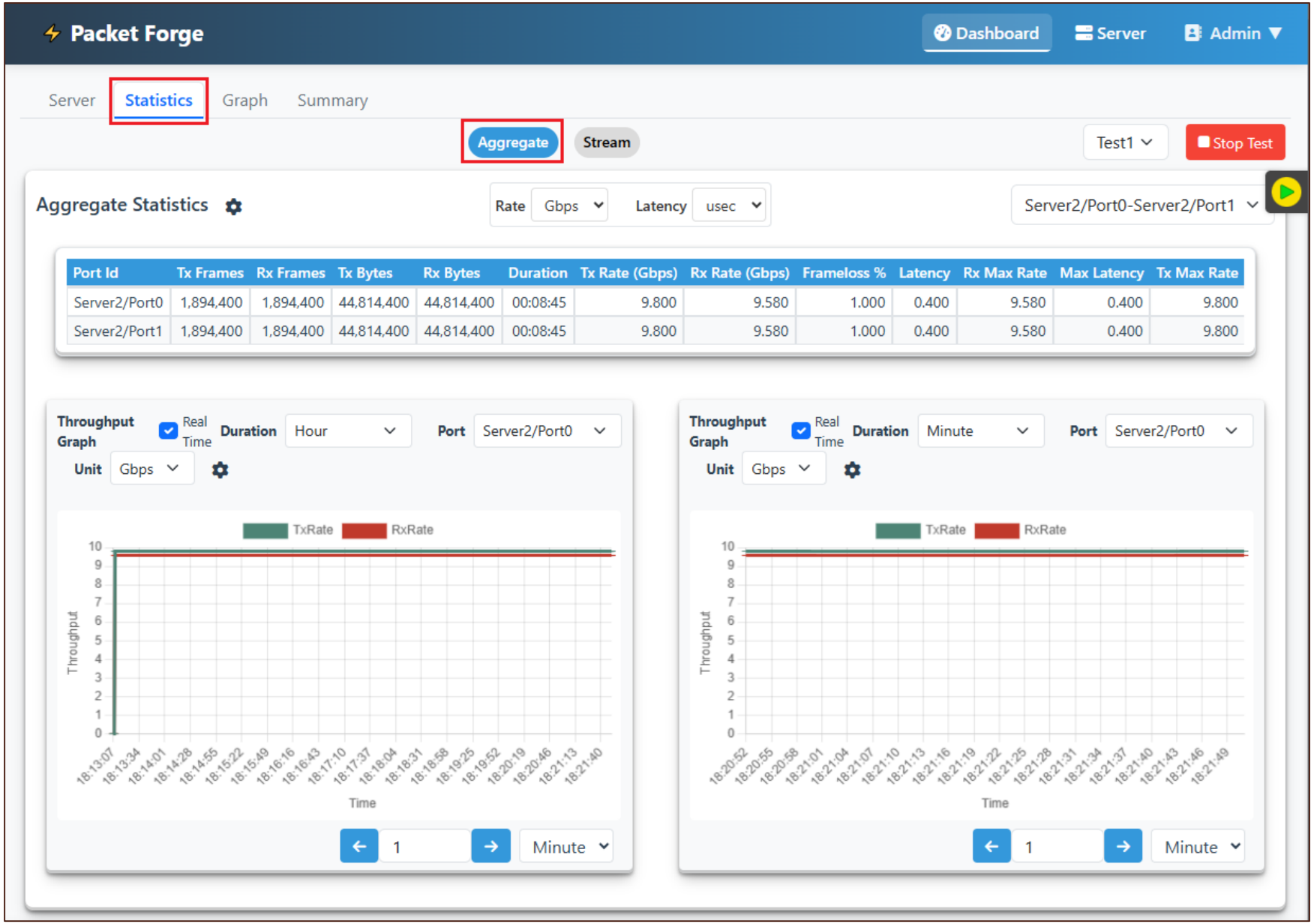
Stream Configurations

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



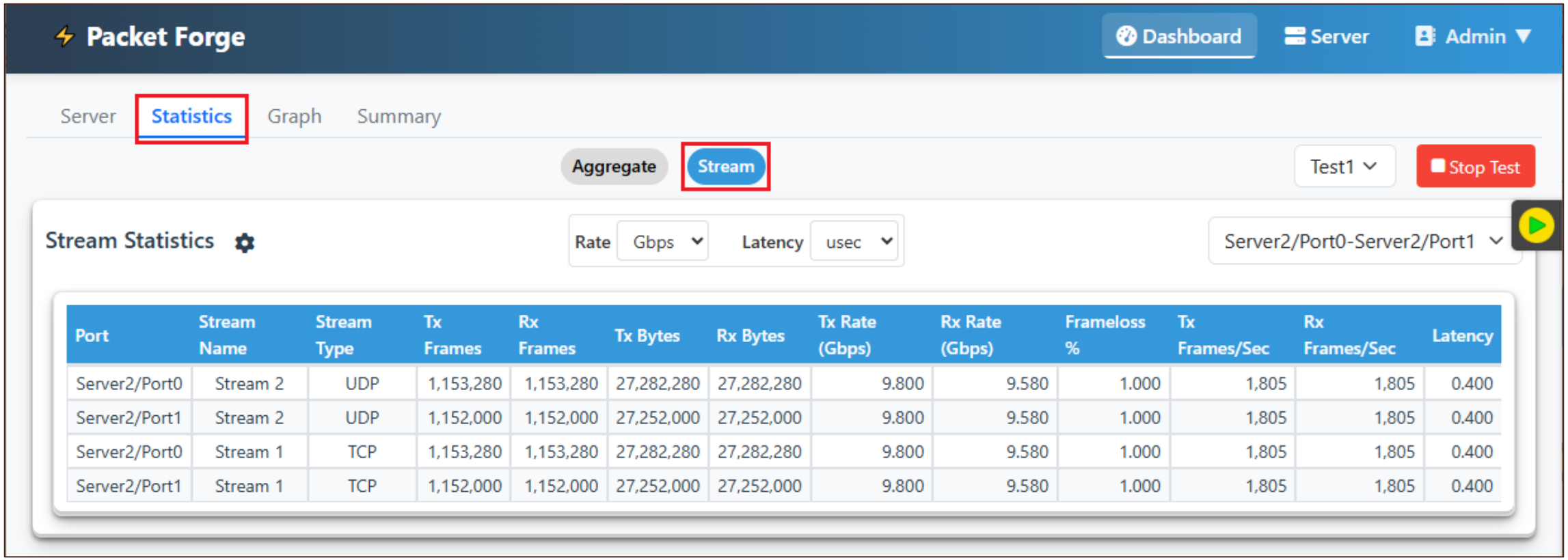
Aggregate Statistics

- 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

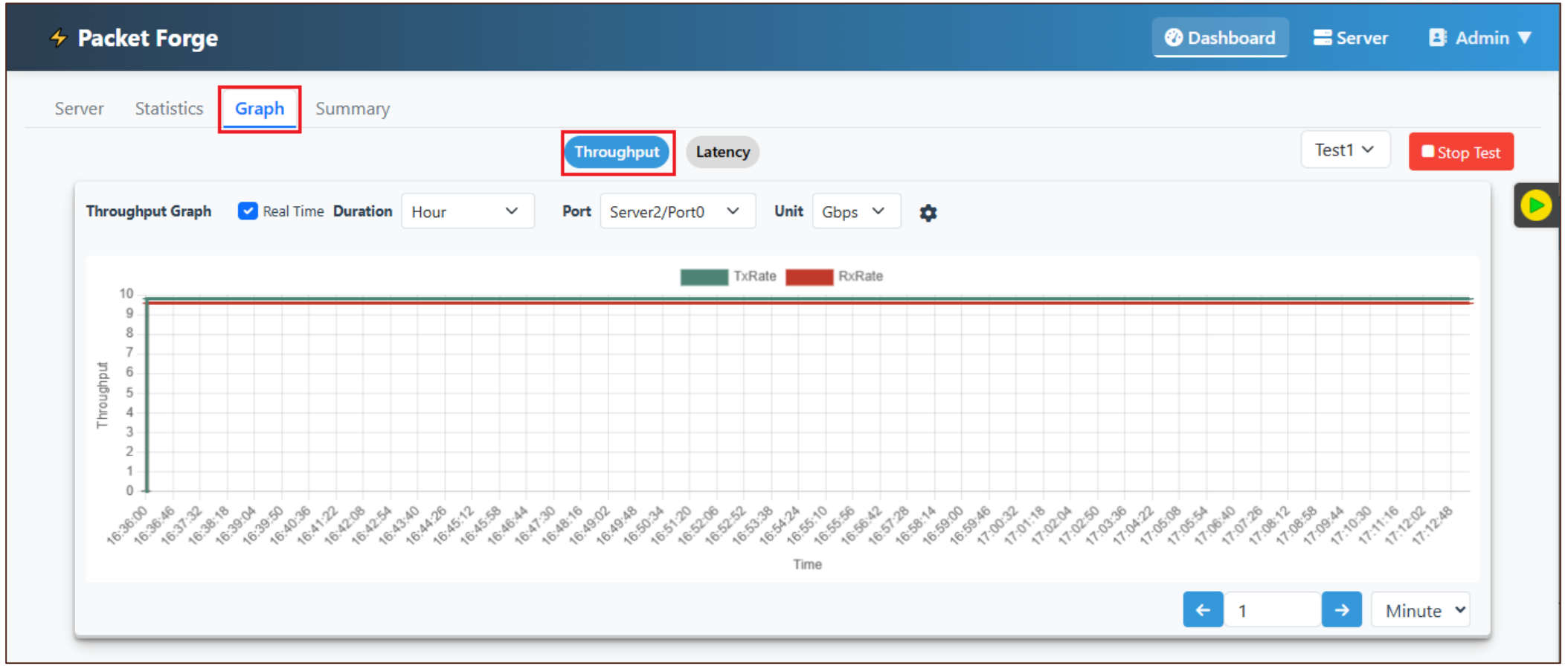
- Provides a streamlined web interface for detailed traffic analysis
- Displays metrics such as **port**, **stream ID**, **protocol (TCP/UDP)**, **frames**, **bytes**, **data rates**, **latency**, and **frameless** percentage



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

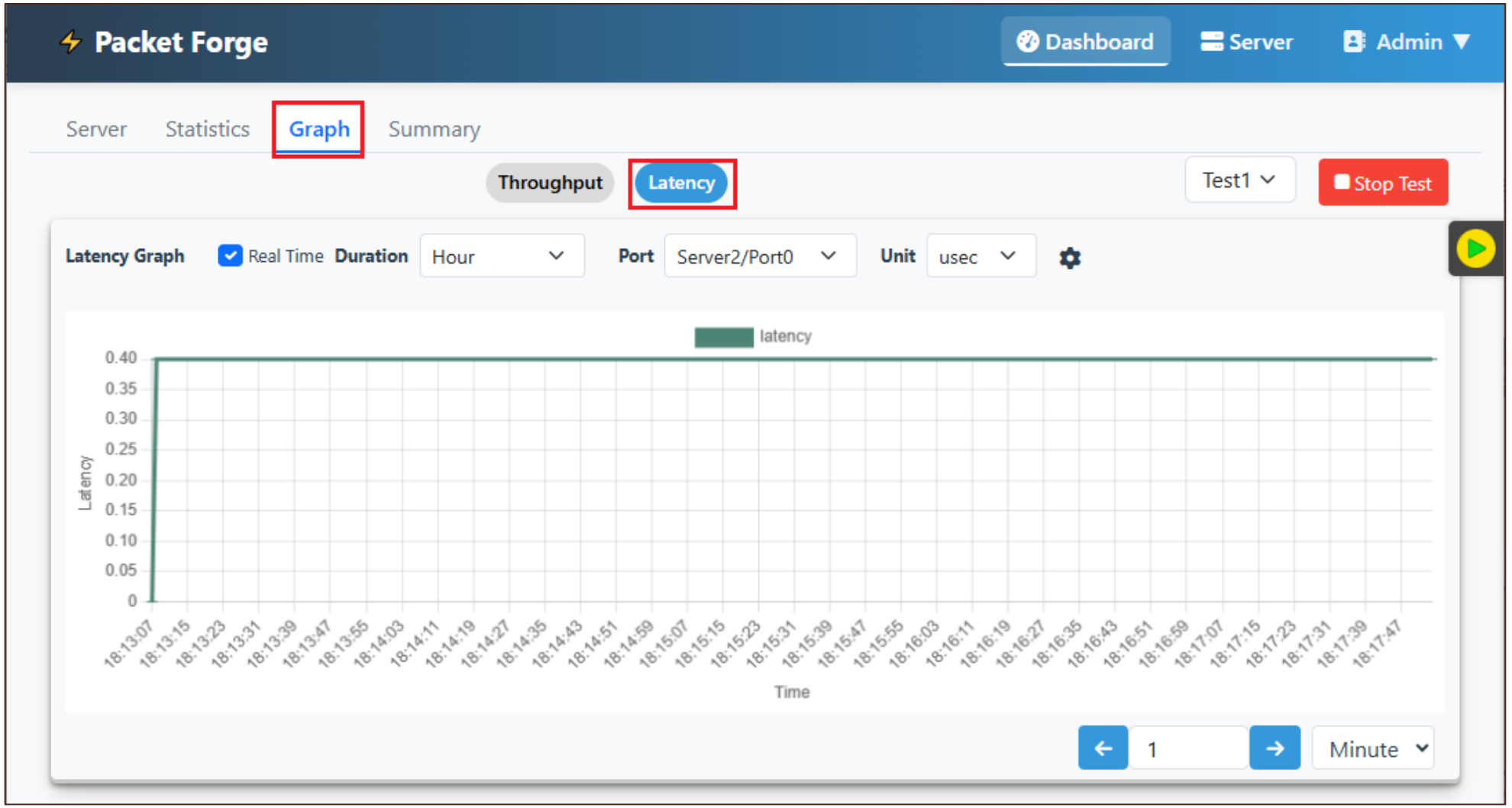
Throughput Graph

- 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



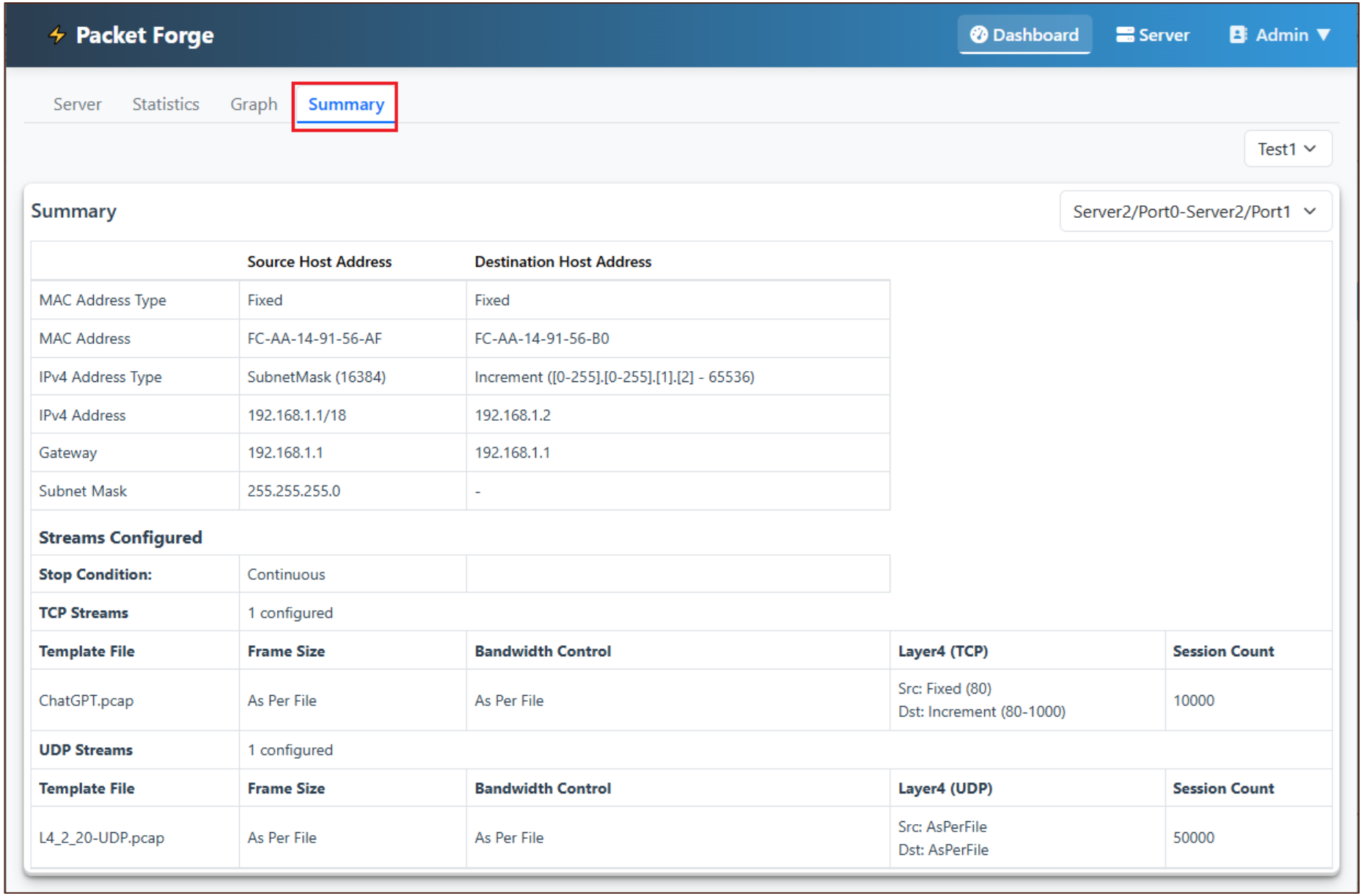
Latency Graph

- 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



	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

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Thank you