

# RECREATING REAL APPLICATION TRAFFIC IN JUNOSPHERE LAB

## Accurately Recreate Applications to Validate Application-Level Policies on Firewalls, Gateways, Routers, and Other Networking Systems

### Challenge

As service providers and enterprises deploy intelligent networks to monetize new services and deliver a superior customer experience, they need to ensure that their application-level policies are working as expected, and their networks can scale and perform to support their customers.

### Solution

Mu Studio Performance runs on a virtual machine within the Junosphere Lab environment. It enables customers to recreate thousands of cloud and enterprise applications at scale, model their production traffic, and validate application-level policies on virtualized firewalls and networking systems.

### Benefits

- Mirror your production network by recreating mixes of application traffic
- Understand the performance and security impact of applications on the network
- Ensure that application policies are effective in guaranteeing the highest level of customer satisfaction

The network is becoming more intelligent with the ability to implement sophisticated traffic management, security, and quality-of-service (QoS) policies that are tied to specific application and user characteristics. However, with hundreds of thousands of applications on the network, and hundreds of new ones being released every day on millions of devices, engineering teams are struggling to quickly and effectively test their application-aware systems and networks.

Mu Studio Performance is an industry-leading performance testing solution designed for validating application behavior in networks. Mu Dynamics has integrated its Mu Studio Performance application into the Juniper Networks® Junosphere™ Lab cloud-based networking platform. This joint solution enables customers to design and create entire networks in a virtual environment, then pass real application traffic through the Junosphere Lab network. With the integrated store, Mu TestCloud, providing access to thousands of ready-to-run application profiles, customers can test their Junosphere Lab networks at scale, using multiple applications to gauge the impact on the network and validate policies.

### The Challenge

Service providers and enterprises are deploying intelligent networks to monetize new services and deliver a superior customer experience. As such, they need a performance solution that uses real application traffic to quickly determine how users and devices impact the network.

Common challenges faced by these organizations include understanding these key factors:

- How the network will behave under real usage conditions with users, devices, and applications
- The effectiveness of application QoS policies on traffic management
- The impact of security policies on application performance

### The Juniper Networks Mu Dynamics Solution—Recreating Applications in a Virtual Environment

Running within the Junosphere Lab environment, Mu Studio Performance enables service providers to optimize the quality of experience (QoE) of their application-aware networks by proactively modeling application mixes.

With its integrated Mu TestCloud store, Mu Studio Performance provides a constant feed of hundreds of new application profiles every month. Mu TestCloud contains thousands of ready-to-run scenarios covering popular applications such as P2P (e.g., BitTorrent, Gnutella), streaming video (e.g., Netflix, YouTube), social media (e.g., Facebook, Twitter), games (e.g., Farmville, Mafia Wars), instant messaging (e.g., Skype, ICQ), and business applications (e.g.,

Oracle, VMware). These application scenarios are updated regularly to include new releases and versions of the latest applications, as well as the latest endpoints such as iPads, iPhones, Droids, and PCs. Users simply download the scenarios within Mu Studio Performance and run them immediately in the Junosphere Lab network.

Using this approach, customers can model users and applications on their network to determine:

- The behavior of the network and the validity of configurations and topologies
- The effectiveness of application QoS policies on traffic management
- The impact of security policies on application performance

## Features and Benefits

- **Accuracy:** Mu Dynamics' unique approach provides immediate and accurate recreation of a mix of applications at scale. It uses real applications running on real devices such as iPhone, iPad, and Droid as the basis for the profiles. The solution transforms the communication exchange into a replayable and stateful scenario, thereby causing the network to experience real application traffic.
- **Agility:** With the integrated Mu TestCloud store, customers have a constant feed of hundreds of new application scenarios every month. This includes hot new apps as well as updates to popular apps like Skype and BitTorrent, and it allows customers to test the moment a new application appears on their network.
- **Simplicity:** Mu Studio Performance is designed to be so intuitive that even a casual user can quickly recreate a mix of applications at scale on the network without undergoing any product training.

- **Virtualization:** Junosphere Lab overcomes traditional challenges associated with network modeling and design by harnessing the power of virtualization to reduce reliance on overburdened physical network labs and dramatically improving efficiency by transforming how organizations approach network modeling.

## Solution Components

- **Junosphere Lab:** Junosphere Lab is a unique cloud-based offering that enables users to create and run networks in a virtual environment. The networks within Junosphere Lab are based on Juniper Networks Junos® operating system—the same network operating system that runs across its switching, routing, and security products. This ensures that users can accurately design, test, and model networks that approximate the scale and behavior of their operational networks. Junosphere Lab also includes the components of the Mu Dynamics Studio Performance application as well as other complimentary products—to provide a highly realistic and comprehensive lab environment.
- **Mu TestCloud:** Mu TestCloud (shown in Figure 1) is the integrated store that provides thousands of ready-to-run Mu test scenarios for a wide range of popular business and consumer applications.
- **Mu Test Manager:** Test Manager (shown in Figure 2) is the software that enables the user to manage tests and results, as well as configure and run a mix of applications at scale.
- **Mu Test Engines:** Test Engines are the software that generates the application traffic. These engines can run as virtual machines in the Junosphere Lab network. Multiple engines can be controlled by the Test Manager to enable elastic scale against the target network.

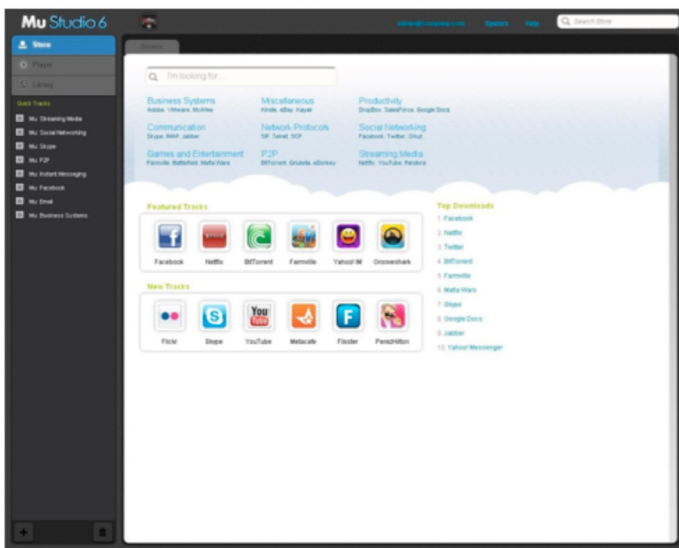


Figure 1: Mu TestCloud provides an integrated store of ready-to-run application scenarios.

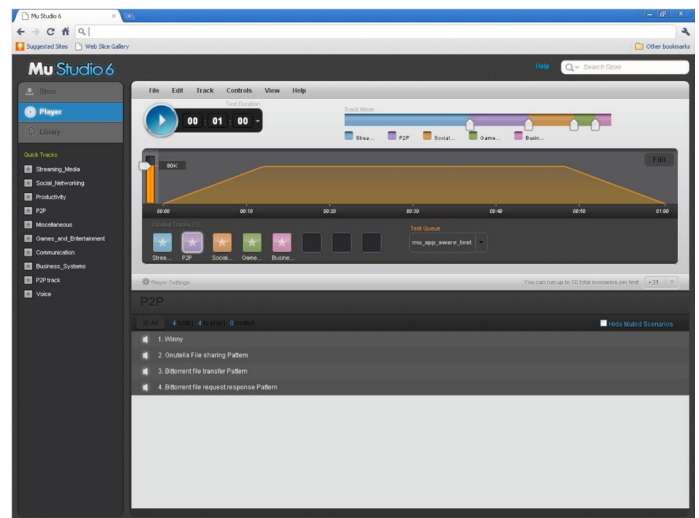


Figure 2: Mu Studio Performance recreates a mix of applications to understand the impact of users on your network.

## Summary—Mu Dynamics and Juniper Join Forces to Assess the Impact of Applications on Network Performance

With the explosion of applications on today's networks, new intelligence is being added to identify applications and apply policies for traffic management, security, and QoS. Mu Studio Performance is an industry-leading performance solution designed for testing these application-aware networks—and is now available within the Junosphere Lab virtual environment. With its integrated store, Mu TestCloud, providing access to thousands of ready-to-run application scenarios, Junosphere Lab users can test their networks running multiple applications to gauge the impact on the network and validate policies before rolling them out to the live network.

### Next Steps

To learn more about the Junosphere Lab and Mu Dynamics joint solution, please contact your Juniper sales representative, or contact Mu Dynamics at [info@mudynamics.com](mailto:info@mudynamics.com) and visit [www.mudynamics.com](http://www.mudynamics.com).

## About Mu Dynamics

Mu Dynamics is the leading provider of testing solutions ensuring the performance and security of both applications and network infrastructure. The company's innovative solutions enable customers to confidently meet the challenges posed by today's rapidly changing networks. This includes the ever growing number of applications and devices on the network, and the swift transition to mobile, virtual, and cloud environments. Hundreds of service providers, enterprises, application developers, and network equipment manufacturers count on its purpose-built testing solutions, like Mu Studio, to ensure that their applications and networks are scalable and secure. Mu Dynamics is headquartered in Sunnyvale, California.

## About Juniper Networks

Juniper Networks is in the business of network innovation. From devices to data centers, from consumers to cloud providers, Juniper Networks delivers the software, silicon and systems that transform the experience and economics of networking. The company serves customers and partners worldwide. Additional information can be found at [www.juniper.net](http://www.juniper.net).

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