

Introduction

Service providers operate in an increasingly demanding market. They are challenged by the need to invest in infrastructure upgrades, a shift to cloud-hosted services, pricing pressures from their customers, a need to be innovative with new services, demands for improved performance and availability, and the risk of customer churn.

ISPs, or “eyeball networks” as they’re often called, are squeezed between the need for costly infrastructure investment to support the growth of video content (e.g., Netflix) or video-based services (e.g., Zoom, MS Teams, WhatsApp) and the risk of customer churn due to a perceived poor experience.

IP transit and wholesale providers are looking to differentiate themselves with value-added services, reduced latency to critical services, and improved SLAs based on performance and availability.

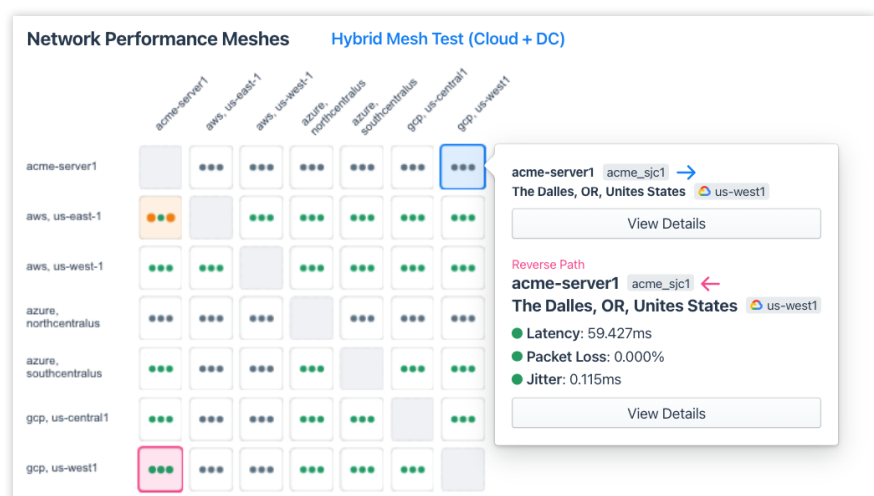
Service providers selling connectivity services to enterprises, such as on-ramping for cloud-hosted services, need to have a comprehensive view of the availability of those business critical services. This view needs to be not only from the perspective of the service provider, but also from the perspective of the business, which could be located anywhere in the world.

About this guide

This guide explains how to use proactive synthetic, or test, agent monitoring as an easy onramp to network observability without the need to export flow and device metrics (which often require heavy setup and configuration requirements and can raise security concerns).

Measure, monitor and report on global performance

Kentik gives you the ability to test the quality of the connection between your network PoPs. We provide private agents that are simple to deploy and can be used to monitor jitter, RTT and packet loss between your PoPs. Many of our customers use this synthetic testing service to generate mesh tests that show the status and performance of their network. While setting up such meshes has traditionally required a significant time investment (with hundreds if not thousands of tests running between dozens of global PoPs), Kentik’s approach makes this as easy as clicking a couple buttons in a browser.



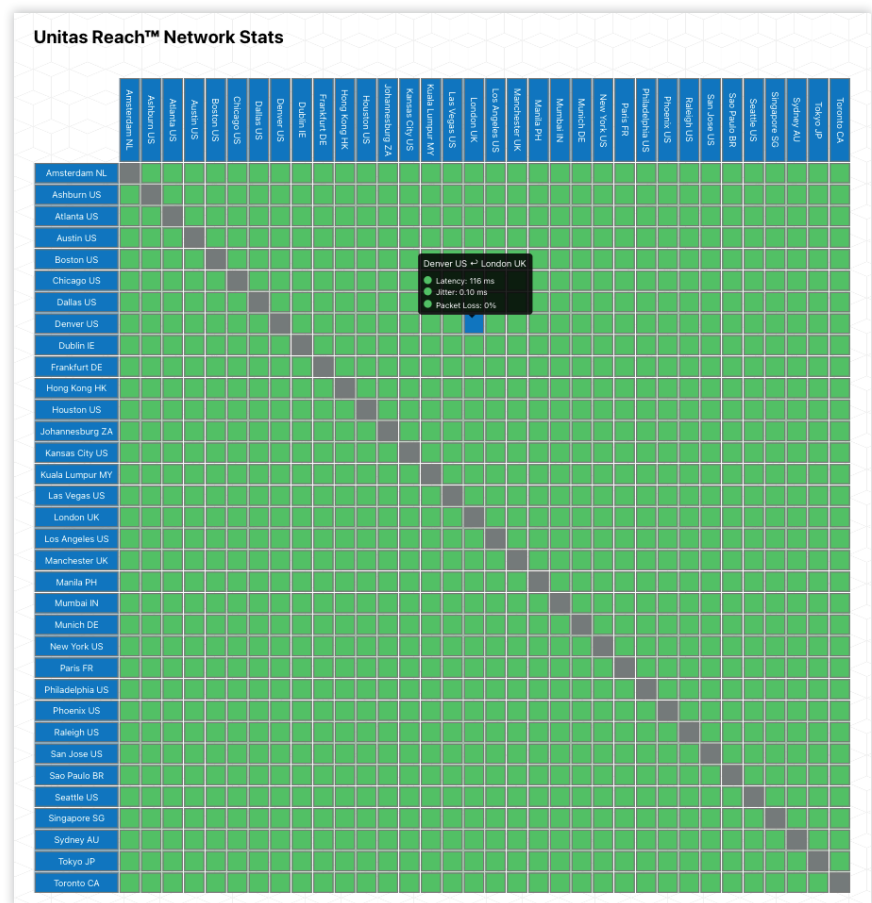
Visualizing the results of all of these tests has been a challenge in some systems as well. Kentik solves this by providing a bird's-eye view of the entire global PoPs and then quickly focuses you on problem areas so that you can drill in further to find the root cause. And because synthetic tests, by definition, are proactive in nature, all of this can be used to catch performance issues before they impact real users. Keep a pulse on response times, network bandwidth issues and/or latency variations autonomously. Intelligent alerts can be set up to notify you only when there's a real problem.

In addition to monitoring global PoP-to-PoP connectivity proactively and using a rich traceroute-driven path experience to identify root-cause issues faster, synthetic performance meshes can also be helpful for marketing and sales, too, when used in conjunction with Kentik's public API.

"We are committed to giving as much information to our customers as possible about network performance, and Kentik allows us to deliver on that promise."

—Grant Kirkwood, co-founder and CTO of Unitas Global

A great example of a customer using our synthetic testing to monitor their network is Unitas Global. They have deployed Kentik synthetic agents on their PoPs, and that information is fed through Kentik's API into Unitas Global's Atlas performance-monitoring tool. The results are made available to all customers via [this public URL](#), showing the status of the communication between their PoPs as seen at right.



Measure, monitor and report on content delivery

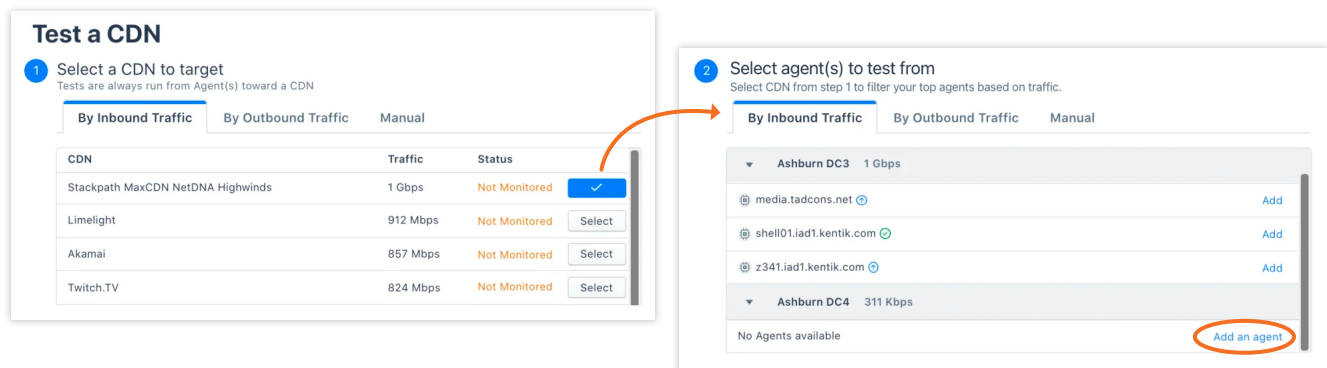
Identifying and monitoring KPIs relating to video traffic enables an ISP to identify and resolve potential problems sooner, proactively address issues before they become customer-impacting, and have improved insights to justify network infrastructure investment or optimization.

Using agents that can be installed anywhere in your network, Kentik allows you to continuously measure, monitor and alert on the key metrics that are important to the experience of your subscribers when consuming video content or when using video-based services for communication.

On-net CDNs are widely deployed to reduce off-net traffic and enhance the delivery quality for subscribers. However, these CDNs need to be refreshed, and the content then needs to be streamed to the subscriber with a minimum latency and jitter to ensure an acceptable user experience.

Installing Kentik synthetic agents at your CDN locations and your subscriber edge routers allows for the continuous measuring of latency, packet loss and jitter between the content source and the local content destination. Any deviation above a maximum latency threshold generates an alert that provides early warning of a potential problem. Tracking latency over a period of time could provide an early indication of the need to build out additional CDN resources to satisfy an increasing demand and maintain high customer satisfaction.

Reports on a network-wide basis, providing a matrix of performance between all content sources and all destinations, can be quickly created for consumption by internal or external teams. Better yet, Kentik incorporates autonomous tests which are a Kentik-unique concept that frees you from the burden of identifying specific destination IP addresses and setting up tests one by one. Just pick a specific type of entity (ASN, CDN, country, region or city) that you would like to test performance towards. Kentik shows you a list of entities of a specific type, ordered by the amount of traffic you have going towards it. Also, these tests can auto-update as your traffic shifts.



Test a CDN

1 Select a CDN to target
Tests are always run from Agent(s) toward a CDN

By Inbound Traffic By Outbound Traffic Manual

CDN	Traffic	Status
Stackpath MaxCDN NetDNA Highwinds	1 Gbps	Not Monitored
Limelight	912 Mbps	Not Monitored
Akamai	857 Mbps	Not Monitored
Twitch.TV	824 Mbps	Not Monitored

2 Select agent(s) to test from
Select CDN from step 1 to filter your top agents based on traffic.

By Inbound Traffic By Outbound Traffic Manual

Ashburn DC3 1 Gbps

- media.tadcons.net Add
- shell01.iad1.kentik.com Add
- z341.iad1.kentik.com Add

Ashburn DC4 311 Kbps

No Agents available Add an agent

Measure, monitor and report on apps and cloud

Kentik has globally deployed over 250 synthetic agents that constantly monitor the performance of cloud-hosted applications and the networks that enable access to those services. Via easy-to-monitor dashboards, you can immediately see if the performance of a SaaS application is causing problems for your customers. Keep tabs on the elements that make up the user experience and be in a position to be the connectivity expert for your customers.

“We not only need to know what is happening across our own network, but we also need to be aware of incidents that occur outside of our network, for example, with our upstream operators.”

— Oleg Yudin, head of network and cybersecurity at G-Core Labs

Performance Dashboard

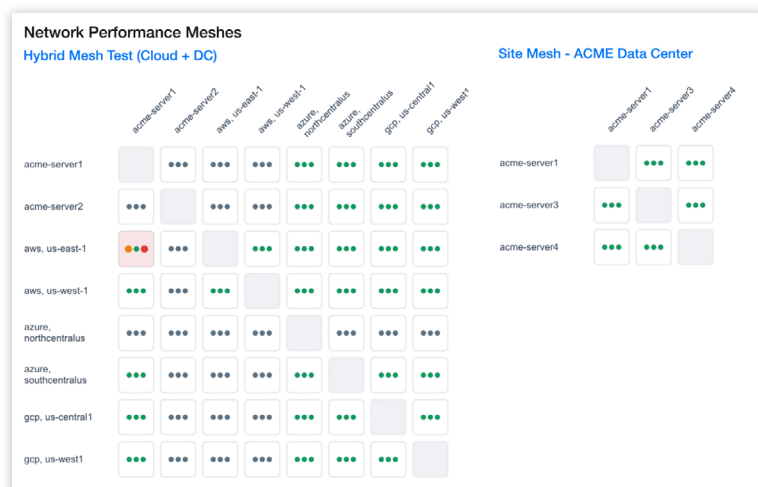
Kentik Demo New Tests | SaaS Apps Performance | Cloud Performance | BGP Route Viewer | DNS Performance

Status	Service	Status Code	Response Size	Domain Lookup Time	Connect Time	Response Time	Avg HTTP Latency	Avg Latency	Avg Jitter	Packet Loss
Healthy	ADP	200	5 KB	80.594 ms	378.322 ms	128.866 ms	587.782 ms	97.514 ms	0.240 ms	14.286 %
Healthy	Bluebeam	200	58 KB	0.847 ms	39.289 ms	777.278 ms	817.213 ms	17.996 ms	0.268 ms	0.000 %
Healthy	Box	200	258 KB	4.041 ms	164.665 ms	935.702 ms	1,104.398 ms	62.782 ms	0.304 ms	0.000 %
Healthy	Cloudflare	200	1 KB	237.208 ms	247.676 ms	100.128 ms	584.912 ms	86.951 ms	0.592 ms	0.000 %
Healthy	Dailpad	200	222 KB	1.700 ms	135.518 ms	743.043 ms	880.261 ms	2.648 ms	0.243 ms	0.000 %
Healthy	Dropbox	200	60 KB	6.955 ms	112.488 ms	401.134 ms	520.576 ms	53.976 ms	0.229 ms	0.000 %
Healthy	Expensify	200	19 KB	2.333 ms	10.425 ms	248.655 ms	261.412 ms	2.245 ms	0.342 ms	0.000 %
Healthy	Github	200	280 KB	0.540 ms	61.204 ms	190.145 ms	251.979 ms	30.781 ms	0.150 ms	14.286 %
Healthy	Gmail	200	129 KB	0.052 ms	39.701 ms	166.826 ms	208.679 ms	2.789 ms	0.177 ms	0.000 %
Healthy	Google Docs	200	101 KB	0.578 ms	39.789 ms	164.264 ms	204.231 ms	2.932 ms	0.166 ms	0.000 %
Healthy	Google Drive	200	90 KB	0.138 ms	40.049 ms	123.372 ms	163.559 ms	2.817 ms	0.169 ms	0.000 %
Healthy	Kronos	200	161 KB	2.027 ms	10.776 ms	45.795 ms	58.598 ms	1.994 ms	0.191 ms	0.000 %
Healthy	Office365	200	119 KB	2.668 ms	63.061 ms	94.953 ms	160.682 ms	19.196 ms	0.199 ms	0.000 %
Healthy	Salesforce.com	200	9 KB	123.903 ms	328.187 ms	136.719 ms	588.809 ms	110.088 ms	0.170 ms	0.000 %

With Kentik you can also view the status of regions within, for example, AWS and Azure by simply looking at the mesh tests generated by our synthetic agents and run continuously. This helps you pinpoint or eliminate customer issues. You can also test the performance of the connection from your own data centers to cloud regions as seen below.

Summary

Kentik offers a cost effective and easy-to-deploy means to measure, monitor and report on the KPIs that are critical to the success of the network-based services that service providers offer. Reach out to our team for a [demo](#) or to [start a free trial](#).



ABOUT KENTIK | Kentik is the network observability company. Our platform is a must-have for the network front line, whether digital business, corporate IT, or service provider. Network professionals turn to the Kentik Network Observability Cloud to plan, run, and fix any network, relying on our infinite granularity, AI-driven insights, and ridiculously fast search. Kentik makes sense of network, cloud, host, and container flow, internet routing, performance tests, and network metrics. We show network pros what they need to know about their network performance, health, and security to make their business-critical services shine. Networks power the world’s most valuable companies, and those companies trust Kentik. Market leaders like IBM, Box, and Zoom rely on Kentik for network observability. Visit us at [kentik.com](#) and follow us at [@kentikinc](#).

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