Optimize networking performance with the Dell PowerEdge R750 featuring a modern 100Gb Broadcom NIC

Using a single 100Gb NIC provided better and more consistent performance than four 25Gb NICs

November 2022

About our testing

We used the Frametest tool to test the maximum available bandwidth of two solutions:

- A Dell™ PowerEdge™ R750 server with a Broadcom® 57508™ Dual Port 100Gb network interface card
- The same PowerEdge R750 server with four 25Gb NICs (Note: We used two dual-port NICs to achieve our 4x 25Gb NIC configuration)

Testing with multiple instances, or data streams, showed that the PowerEdge R750 with a single 100Gb Broadcom 57508 NIC achieved higher frames per second (FPS) rates than the four-NIC solution.

For example, at eight instances, the Broadcom 57508 solution achieved 31 percent more FPS on average, and showed greater transfer consistency for each video stream.

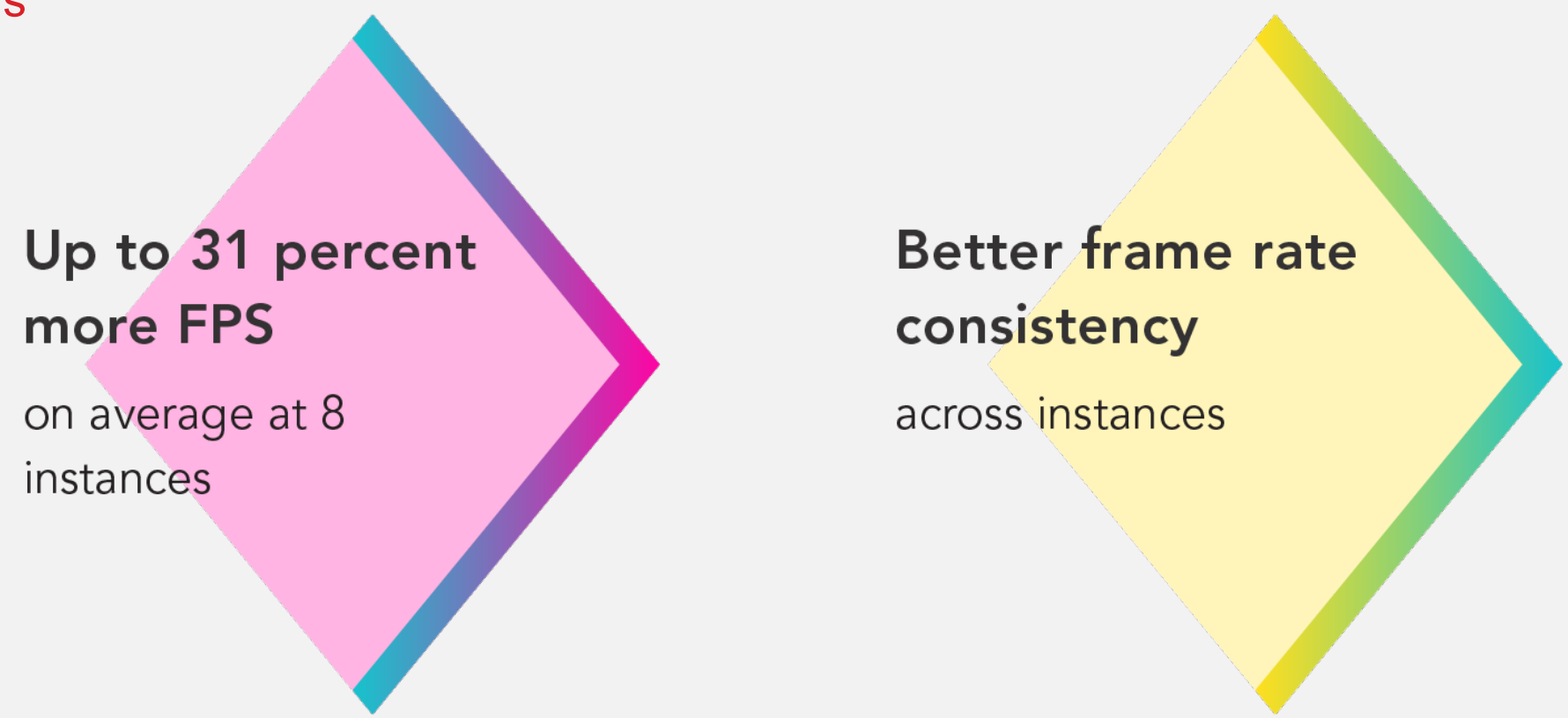
About PT

Principled Technologies, Inc. (PT) is the leading provider of third-party competitive marketing services for technology.

Our hands-on testing mirrors the way real users work with your product and delivers proof points you and they can count on, while our award-winning competitive marketing contextualizes those claims.

Learn more at www.principledtechnologies.com.

Key claims



with a Dell PowerEdge R750 server with a Broadcom 57508 Dual Port 100Gb network interface card versus the same PowerEdge R750 server with four 25Gb NICs

Frame rates are a measure of video quality—the more frames per second that a solution can handle, the clearer the information relayed on screen. Common video workloads include retail organizations using AI on video streams to identify buying patterns, safety and security video solutions, and content creation.

Up to 31 percent more FPS

on average at 8 instances

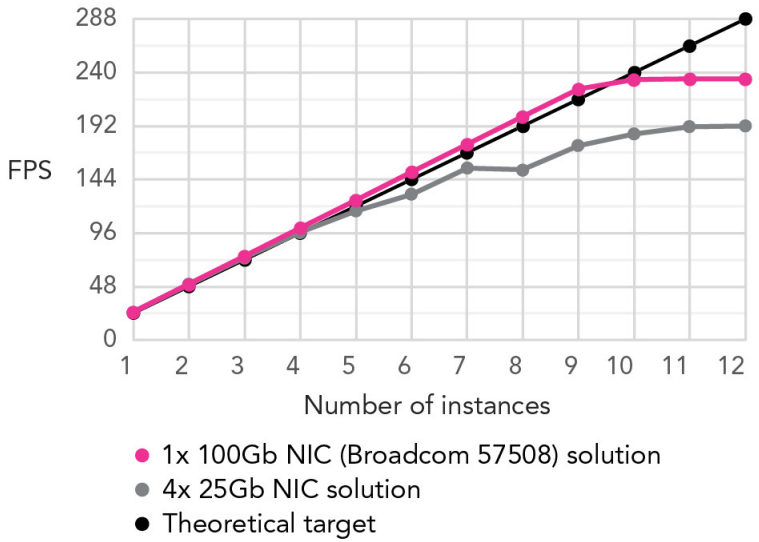
Benefits

- Move files to the target destination faster
- Ensure that digital media arrives at its intended location at the highest possible quality

Detailed test results

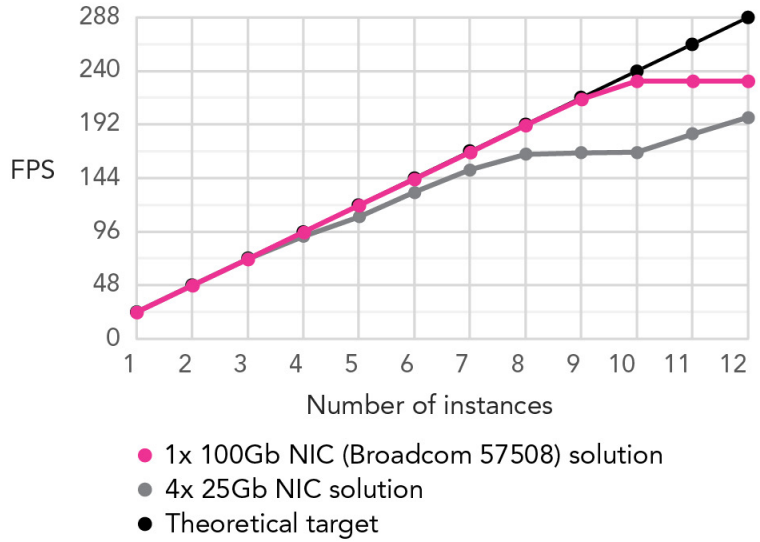
Average frames per second: Reads

Higher is better



Average frames per second: Writes

Higher is better



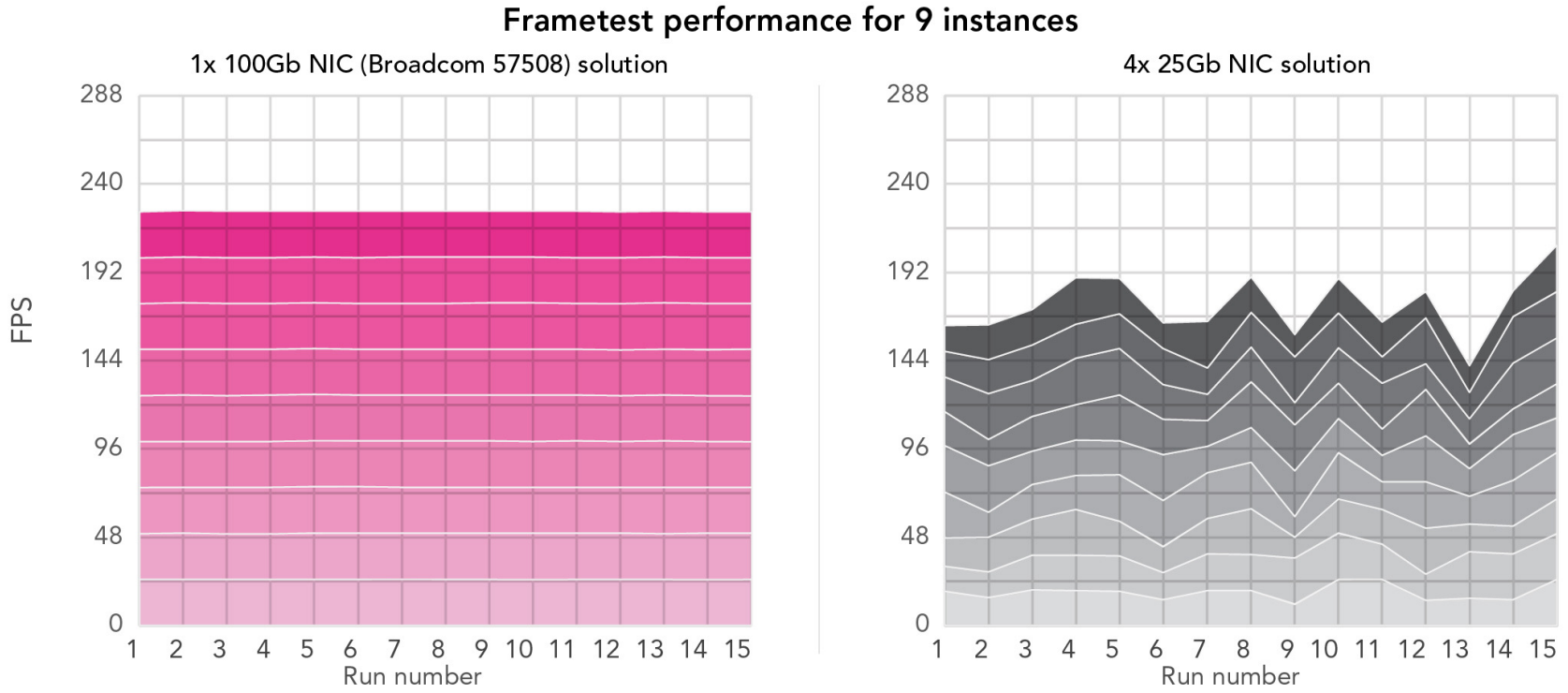
Detailed test results

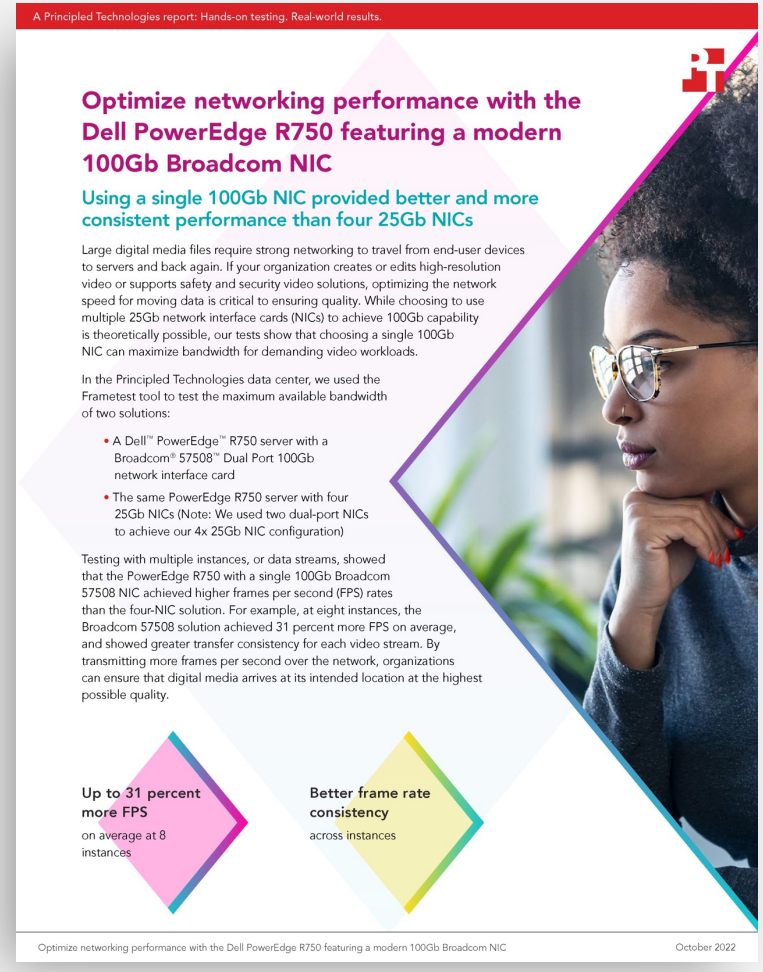
Better frame rate consistency

across instances

Benefits

- Fewer dropped frames for smoother video transmission
- Less degradation/disruption of media





A Principled Technologies report: Hands-on testing. Real-world results.

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Large digital media files require strong networking to travel from end-user devices to servers and back again. If your organization creates or edits high-resolution video or supports safety and security video solutions, optimizing the network speed for moving data is critical to ensuring quality. While choosing to use multiple 25Gb network interface cards (NICs) to achieve 100Gb capability is theoretically possible, our tests show that choosing a single 100Gb NIC can maximize bandwidth for demanding video workloads.

In the Principled Technologies data center, we used the Frametest tool to test the maximum available bandwidth of two solutions:

- A Dell™ PowerEdge™ R750 server with a Broadcom® 57508™ Dual Port 100Gb network interface card
- The same PowerEdge R750 server with four 25Gb NICs (Note: We used two dual-port NICs to achieve our 4x 25Gb NIC configuration)

Testing with multiple instances, or data streams, showed that the PowerEdge R750 with a single 100Gb Broadcom 57508 NIC achieved higher frames per second (FPS) rates than the four-NIC solution. For example, at eight instances, the Broadcom 57508 solution achieved 31 percent more FPS on average, and showed greater transfer consistency for each video stream. By transmitting more frames per second over the network, organizations can ensure that digital media arrives at its intended location at the highest possible quality.

Up to 31 percent more FPS
on average at 8 instances

Better frame rate consistency
across instances

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