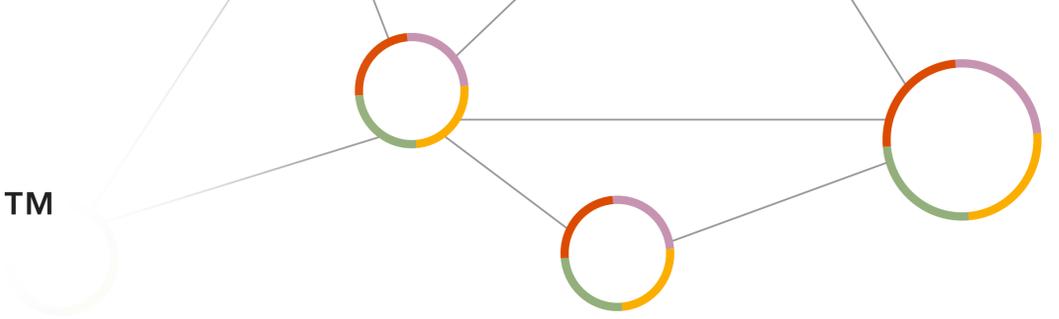


10 REASONS

YOUR NETWORK NEEDS *WarpENGINE*™

Must-Have Optimization For Today's Networks And Applications

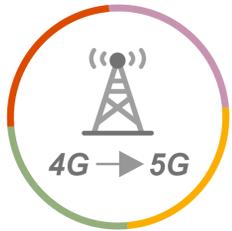


1 Only WarpEngine Eliminates Today's Leading Cause of Throughput Collapse on WAN, Wi-Fi and Mobile Networks



The leading cause of network throughput collapse is jitter, common with today's streaming applications that transmit volumes of data in random bursts, virtualization jitter from clouds hosting them, and volatile last mile wireless connections used to access them. Network protocols treat jitter as congestion, slowing traffic to avoid data loss until throughput collapses, even when plenty of bandwidth is available. Most optimization tools rely on compression, deduplication, and caching that improve performance by reducing bandwidth usage. However, these techniques do nothing to prevent jitter-induced throughput collapse. They also require access to the payload in unencrypted form, making them largely ineffective now that over 80% of traffic is encrypted. Only Badu Networks' patented WarpEngine algorithmically filters out the impact of jitter. It doesn't rely on jitter buffering, which destroys performance for real-time video, voice and IoT applications, and it doesn't need payload access. As a result, WarpEngine delivers up to 10x improvements in performance and throughput for all types of traffic on existing WAN, Wi-Fi and mobile networks, and future-proofs them for 5G.

2 Only WarpEngine Overcomes 4G LTE Performance and Throughput Challenges and Prepares Your Network for 5G



RF interference, fading and channel access conflicts frequently cause retransmission timeouts (RTOs) leading to jitter-induced throughput collapse in today's 4G LTE mobile networks. In the busy high-speed, small cell, low round trip time (RTT) networks planned for 5G, the impact of RTOs will be devastating, resulting in more jitter-induced throughput collapse than ever. Traditional network optimization does little to address it in today's 4G environment, and will be even less effective with 5G. Only WarpEngine algorithmically filters out the impact of jitter to maximize 4G throughput and performance today, and 5G in the future.

3 Optimize Wi-Fi Today and 5G FWA Tomorrow



Actual user experience in a Wi-Fi network is almost always impacted by RF interference, fading and channel access conflict that create jitter across the entire network path from the origin server, causing throughput to collapse and applications to stall. Only WarpGateway, built on the same core technology as WarpEngine, filters out the impact of external factors that create jitter in today's home, office or large public Wi-Fi networks to maximize performance and throughput, and will do the same for tomorrow's 5G FWA.

4 Only WarpEngine maximizes return from existing infrastructure, avoiding the time and cost of network upgrades to increase bandwidth



Jitter-induced throughput collapse has nothing to do with available bandwidth. In fact, adding bandwidth often leads to increased incidence of jitter-induced throughput collapse. Only WarpEngine analyzes bandwidth available to each network session and prevents congestion management from reducing throughput when the problem is really jitter. That's why WarpEngine delivers up to 10X improvements in throughput and performance without any changes to existing infrastructure.

5 WarpEngine is the Most Effective Solution for Encrypted Traffic



Now that over 80% of internet traffic is encrypted, tools that require unencrypted payload access for deduping and compression offer little value, and often make performance worse than having no solution. They add encryption/decryption delays at each endpoint that increase jitter, and bring the maintenance overhead and security risk of exposing sensitive keys to a third-party solution. Only WarpEngine's algorithmic optimization that requires no payload access eliminates encryption/decryption overhead, along with the security risks and extra maintenance required to support it.

6 Transparent Single Instance Plug-and-Play Deployment Delivers Maximum Flexibility at Minimum Cost



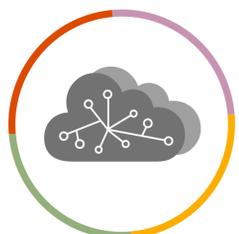
Unlike WAN accelerators that require installation at each endpoint, significant configuration, and continuous monitoring, WarpEngine's technology is plug-and-play. It can be installed at a single location anywhere on the network as a hardware appliance, software module or VM, on-premises, in a cloud provider's environment, a cell tower base station, or between an access point and Wi-Fi router. No client application or server modifications are required and the overhead of supporting hardware and software at multiple locations is eliminated.

7 Designed for Public, Private and Hybrid Cloud Deployments



In the cloud, scheduling conflicts between VMs and hypervisor transfer delays create virtualization jitter that compounds jitter generated by the hosted applications. Only WarpVM, based on WarpEngine technology, prevents throughput collapse due to virtualization jitter in AWS, Microsoft Azure, Google Cloud, or any public, private, or hybrid cloud environment.

8 WarpSDN Leverages WarpEngine's Patented Technology to Deliver SD-WAN that binds multiple links and optimizes them



Most SD-WAN tools make decisions based on measurements at the edge to select the best performing link among broadband internet, dedicated MPLS, Wi-Fi, LTE, 5G or any other network transport routing the highest priority traffic over the best performing connection at any point in time. While some SD-WAN solutions incorporate WAN optimization that reduces bandwidth usage for some types of traffic, they have little control over what happens after the link is selected. In contrast, WarpSDN takes the extra steps of binding multiple links to leverage their combined bandwidth, and optimizing each link's performance and throughput using patented WarpEngine technology.

9 WarpEngine Is the Enabler for Mobile Edge and Fog Computing



New Mobile Edge and Fog Computing architectures are designed for real-time applications with high speed wireless networks and locally cached content that distant cloud data centers can't effectively support. They also filter traffic between the edge and the cloud. This requires optimization that is both hierarchical and distributed to respond to ever-changing network conditions as traffic moves between layers, especially in short RTT, jitter-prone mobile edge networks used by IoT devices where the impact of RTOs can be devastating. WarpEngine's transparent proxy architecture and ability to locally cache content, combined with WarpSDN to respond to ever changing network conditions, and WarpVM to address cloud virtualization jitter can meet these requirements.

10 WarpEngine is Required for a Complete, Future-Proof Network Optimization Strategy



QoS tools are traditionally used to prioritize traffic and prevent packet loss. However, they can't guarantee performance and throughput in today's jitter-prone network environments where over 80% of the data is encrypted. The move to cloud, and the proliferation of IoT-enabled devices communicating over Wi-Fi, 4G LTE and small-cell 5G networks at the edge will intensify jitter's impact. To address this WarpEngine tackles jitter head-on, algorithmically filtering out its impact to prevent throughput collapse for all types of traffic. With WarpEngine, QoS settings can be relaxed as performance improves dramatically for all users, and you have a complete network optimization solution now and in the 5G future.

