



# Semiconductor leader shifts to public cloud to gain business agility and IT efficiency powered by a business-driven SD-WAN edge platform

eSilicon accelerates access to cloud applications with the EdgeConnect SD-WAN edge platform, enhancing end-user productivity and accelerating time to market

The semiconductor industry is complex, fast-paced, and constantly evolving. Few companies understand this better than eSilicon. Sitting in the heart of the global supply chain for application-specific integrated circuits (ASICs), eSilicon designs and coordinates the manufacturing of these custom integrated circuits for today's leading-edge semiconductor markets such as high-performance computing, 5G infrastructure, networking and artificial intelligence.

Specific technical requirements for the ASICs eSilicon designs and delivers vary widely based on the unique needs of each customer. Ensuring rapid time to market is always a challenge. And further complicating the business, eSilicon can experience sharp spikes in demand from their customers driven by things like seasonal fluctuations in the customer's end markets. For the company's CIO and Vice President of Global IT Naidu Annamaneni,



75% DATA  
REDUCTION



10% LOWER  
LATENCY



INCREASED NETWORK  
AGILITY

all these factors pointed squarely to public cloud as the way to gain greater agility and efficiency. So, Annamaneni and his team embarked on an enterprise cloud strategy to move its entire IT infrastructure into Google Cloud Platform (GCP).

The move to GCP also required modernizing eSilicon's wide-area network. Like a lot of enterprises, eSilicon had a traditional MPLS-based WAN connecting its global locations with applications and services running in a corporate data center. However, with everything running in GCP, a traditional WAN approach no longer made sense.



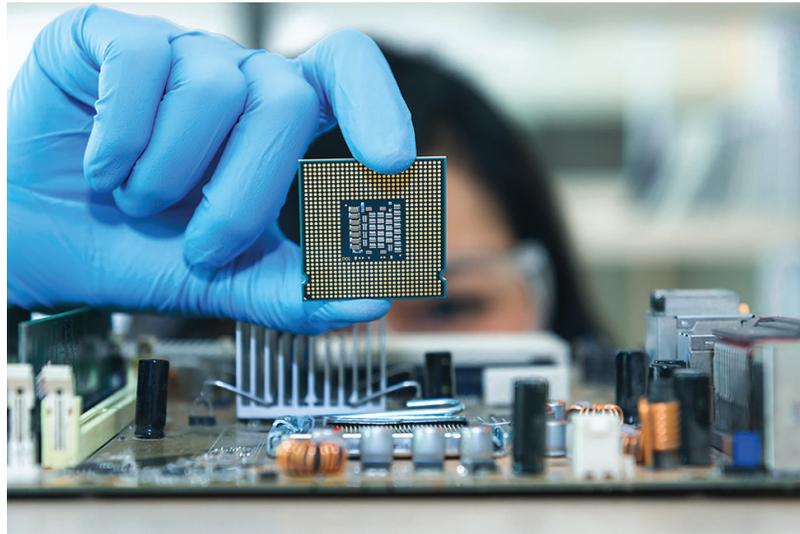
**With the EdgeConnect SD-WAN edge platform connecting our sites and a highly automated and agile cloud infrastructure, users enjoy a high quality of experience and are able to be more productive, which ultimately helps improve time to market.”**

— Naidu Annamaneni, CIO and Vice President of Global IT, eSilicon

Annamaneni explains, “Public cloud is the perfect model for providing the kind of elasticity we need to expand infrastructure as demand goes up and contract it when demand goes back down. We also needed that same level of flexibility in our WAN, with full mesh connectivity and WAN traffic optimized across all our sites and GCP.”

## Greater network agility and efficiency ideal for public cloud

Annamaneni knew about SD-WAN and evaluated several vendors, ultimately selecting the Silver Peak [Unity EdgeConnect™](#) SD-WAN edge platform with the optional [Unity Boost™](#) WAN optimization performance pack. Why? “Silver Peak offered the most complete set of SD-WAN capabilities, including WAN optimization, unified on a single platform,” says Annamaneni. “We are heavy Citrix users, and in our testing, we saw that Boost delivered a 75 percent data reduction for Citrix traffic, which was a big factor in our decision. Simplicity, connectivity, WAN optimization, and ease of implementation all made Silver Peak the right choice for us.”



Today, eSilicon has the EdgeConnect SD-WAN edge platform deployed at all 12 of its global sites, including two GCP instances. Each EdgeConnect appliance is terminated with two commercial internet links, each from a different internet service provider, creating a full mesh network across the enterprise and Google Cloud. MPLS has been decommissioned, and associated legacy routers eliminated.

The company takes full advantage of the routing interoperability built into the EdgeConnect platform, as well as its full suite of advanced SD-WAN capabilities such as [path conditioning](#), quality of service (QoS),

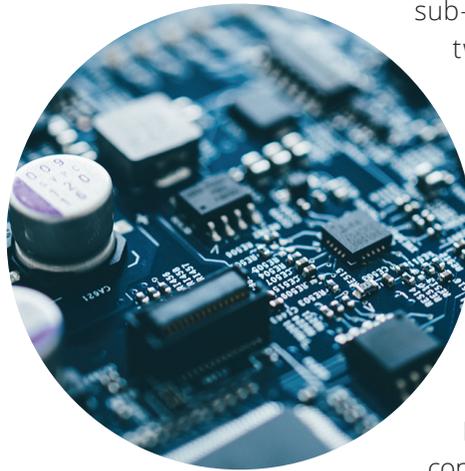
dynamic path control, and policy-driven business intent overlays. In addition, the EdgeConnect platform is service-chained with eSilicon's Palo Alto Networks virtual firewalls deployed in GCP. The SD-WAN is centrally managed end to end using the Unity Orchestrator™ management interface.

"The routing capabilities in EdgeConnect made it simple and easy to implement a full mesh network," Annamaneni says. "We also use the business intent overlays to provide applications with the appropriate network resources they require. For example, we want to ensure our Citrix applications running in GCP get priority, so if someone is transferring a large engineering file, they won't hog all the available bandwidth and make our Citrix users suffer."

## Optimized application performance improves end-user experience

Boost WAN optimization proved to be a highly impactful component of the complete Silver Peak SD-WAN solution. In fact, in addition to the 75 percent data reduction achieved by Boost, latency also improved by 10 percent.

Annamaneni notes, "We performed a controlled test to observe performance with and without Boost. We saw significant data reduction and latency reduction with Boost, which our users feel directly in better application responsiveness."



He adds, "Boost gives us another side benefit. The data reduction we gain through compression and deduplication means our cost of egressing data from the cloud also goes down an equivalent 75 percent."

One of the most important benefits for eSilicon from having a more responsive, performance-optimized SD-WAN is that users can connect to its cloud-based infrastructure without being limited by network congestion or link outages. With sub-millisecond failover between the two internet circuits, a single link failure no longer results in downtime. And the combination of cloud computing and SD-WAN means the business can move with the speed and agility its customers require.

"IT is no longer a factor in limiting the growth of the business," Annamaneni declares. "With the EdgeConnect SD-WAN edge platform connecting our sites and a highly automated and agile cloud infrastructure, users enjoy a high quality of experience and are able to be more productive, which ultimately helps improve time to market. That's critical for our business."

He concludes, "The EdgeConnect SD-WAN platform also gives us more flexibility to integrate with other cloud environments in the future if that's something a particular customer requires. Adopting a multi-cloud strategy becomes much easier with SD-WAN."

For more information on Silver Peak and our solutions, please visit: [silver-peak.com](https://silver-peak.com)



## Customer

[eSilicon](#) provides complex ASICs, market-specific IP platforms, and advanced packaging solutions. Its ASIC-proven, differentiating IP includes high-performance communication blocks, embedded memory and memory interfaces, specialty libraries, and AI-specific functions. eSilicon serves the high-bandwidth networking, high-performance computing, AI and 5G infrastructure markets.

## Challenge

eSilicon designs and delivers custom integrated circuits, called ASICs, which are specific to each customer's unique specifications and application requirements. The company needed more agility in its infrastructure to respond to dynamic customer demand, so it moved all operations into [Google Cloud Platform](#). However, its traditional MPLS-based WAN did not provide the necessary agility and efficiency to support a cloud-first enterprise.

## Solution

eSilicon deployed the Unity EdgeConnect SD-WAN edge platform to all 12 of its global sites as well as two Google Cloud environments. At each location, the EdgeConnect platform is terminated with two commercial internet circuits, and traffic into and out of the cloud is optimized with the optional Unity Boost WAN optimization performance pack.

The company takes full advantage of the routing interoperability built into the EdgeConnect platform to enable a full mesh network. The EdgeConnect platform is also service chained with eSilicon's Palo Alto Networks virtual firewalls deployed in GCP. eSilicon uses Unity Orchestrator to centrally manage the SD-WAN from end to end.

## Results

- > Increased network agility and efficiency to support enterprise cloud strategy
- > Reduced data by 75 percent through deduplication and compression using Boost
- > Lowered data egress costs from cloud by 75 percent
- > Reduced latency by 10 percent, improving application responsiveness
- > Enabled high quality of end-user experience working in cloud
- > Improved productivity and time-to-market, paving the way for business growth
- > Maximized network uptime with automated, sub-millisecond link failover
- > Provided flexible foundation for easily evolving to multi-cloud strategy



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