# Managed
# SD-WAN SOLUTIONS
## delivering HIGH PERFORANCE
## resilient CONNECTIVITY

JT's Managed SD-WAN Service uses the Silver Peak Unity EdgeConnect™ SD-WAN platform to deliver high quality network and application performance across retail premises and business headquarters.

With a business-first networking model, the network enables the business, rather than the business conforming to the constraints of the network. The network becomes a business accelerant that is fully automated and continuous, giving every application the resources it truly needs to ensure the highest quality of experience for end users and IT. It is able to connect users and devices (like PoS) to applications using any combination of WAN transport (including MPLS, Internet, and 4G LTE). A key benefit is that the configuration and deployment is simplified since the EdgeConnect platform unifies core network functions including SD-WAN, firewall, routing and WAN optimization in a single system that is centrally managed with a single, graphical, management interface, Unity Orchestrator™. This ultimately allows us to lower the cost of our solution, while delivering the business agility our customers require to maintain a competitive edge.

## UNITY EDGECONNECT SD-WAN SOLUTION COMPONENTS

- **Unity EdgeConnect physical or virtual appliances** (supporting any common hypervisors and public clouds) deployed in branch offices to create a secure, virtual network overlay. This enables customers to move to a broadband WAN at their own pace, whether site-by-site, or via a hybrid WAN approach that leverages MPLS and broadband internet connectivity.

- **Unity Orchestrator™**, included with the Edge- Connect solution, provides unprecedented levels of visibility into both legacy and cloud applications with the unique ability to centrally assign policies based on business intent to secure and control all WAN traffic. Policy automation speeds and simplifies the deployment of multiple branch offices and enables consistent policies across applications.

- **Unity Boost™** WAN Optimization is an optional WAN optimization performance pack that combines Silver Peak WAN optimization technologies with EdgeConnect to create a single, unified WAN edge platform. Boost allows companies to accelerate performance of latency-sensitive applications and minimize transmission of repetitive data across the WAN in a single, fully integrated SD-WAN solution.

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## ENABLING FASTER SD-WAN DEPLOYMENTS

- Unity Orchestrator, included with Unity EdgeConnect, enables zero-touch provisioning of EdgeConnect appliances in the branch. Orchestrator automates the assignment of business intent policies to ensure faster and easier connectivity across multiple branches, eliminating the configuration drift that can come from manually updating rules and access control lists (ACLs) on a site-by-site basis. Unity Orchestrator enables customers to:

- Avoid WAN reconfigurations by delivering applications to users in customized virtual overlays

- Align application delivery to business goals through virtual WAN overlays based on business intent

- Simplify branch deployments with EdgeConnect Profiles that describe the virtual and physical configuration of the location.

## OVERCOME EFFECTS OF LATENCY

WAN latency is directly proportional to the distance traveled between the two network endpoints. Silver Peak offers a variety of TCP acceleration techniques to mitigate WAN latency, including Window Scaling, Selective Acknowledgement, Round-Trip Measurement, and High Speed TCP. Windows and other applications that rely on the Common Internet File System (CIFS) often take longer to perform common file operations over distance,such as retrieving and sharing files. **Unity Boost** helps these applications not only by improving the underlying TCP transport, but also by accelerating CIFS through CIFS read-ahead, CIFS write-behind, and CIFS metadata optimizations.

## INCREASE THROUGHPUT

As packets flow through EdgeConnect appliances, **Unity Boost** inspects WAN traffic at the byte-level and stores content in local data stores. As new packets arrive, Silver Peak computes fingerprints of the data contained within the packets, and checks to see whether these fingerprints match data that is stored locally. If the remote appliance contains the information, there is no need to resend it over the WAN. Instead, specific start-stop instructions are sent to deliver the data locally.

## EDGECONNECT KEY FEATURES

- Zero-Touch Provisioning: A plug-and-play deployment model enables Unity EdgeConnect to be deployed at a branch office in seconds, automatically connecting with other Silver Peak nstances in the data center, other branches, or in cloud Infrastructure as a Service (IaaS) such as Amazon Web Services, Microsoft Azure, Oracle Cloud Infrastructure and Google Cloud Platform.

- **Tunnel Bonding**: Configured from two or more physical WAN transport services, bonded tunnels form a single logical overlay connection, aggregating the performance of all underlying links. If a link fails, the remaining transport links continue to carry all traffic avoiding application interruption.

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- **Virtual WAN Overlays**: The EdgeConnect SD-WAN edge platform is built upon an application-specific virtual WAN overlay model. Multiple overlays may be defined to abstract the underlying physical transport services from the virtual over-lays, each supporting different QoS, transport, and failover characteristics. Applications are mapped to different overlays based upon business intent. Virtual WAN overlays may also be deployed to extend micro-segmentation of specific application traffic from the data center across the WAN to help maintain security compliance mandates.

- **Dynamic Path Control (DPC)**: Real-time traffic steering is applied over any broadband or MPLS link, or any combination of links based on company-defined policies based upon business intent. In the event of an outage or brownout, EdgeConnect automatically continues to carry traffic on the remaining links or switches over to a secondary connection.

- **WAN Hardening**: Each WAN overlay is secured edge-to-edge via 256-bit AES encrypted tunnels. No unauthorized outside traffic can enter the branch. With the option to deploy EdgeConnect directly onto the internet, WAN hardening secures branch offices without the appliance sprawl and operating costs of deploying and managing dedicated firewalls.

- **Path Conditioning**: This feature provides private-line-like performance over the public internet. Includes techniques to overcome the adverse effects of dropped and out-of-order packets that are common with broadband internet and MPLS connections to improve application performance.

- **First-packet iQ™ Application Classification**: EdgeConnect First-packet iQ application classification identifies applications on the first packet to deliver trusted SaaS and web traffic directly to the Internet while directing unknown or suspicious traffic to the data center firewall or IDS/ IPS. Identifying applications on the first packet is especially important when branches are deployed behind Network Address Translation (NAT); the correct path must be selected based on the first packet to avoid session interruption.

- **Local Internet Breakout**: Granular, intelligent traffic steering enabled by First-packet iQ elim- inates the inefficiency of backhauling all HTTP/HTTPS traffic to the data center. The solution eliminates the potential for wasted bandwidth and performance bottlenecks for trusted SaaS and web traffic. Trusted traffic is sent directly across the Internet while unknown or suspicious traffic may be sent automatically to more robust security services in accordance with corporate security policies.

- **Routing**: EdgeConnect supports standard Layer 2 and Layer 3 open networking protocols such as VLAN (802.1Q), LAG (802.3ad), IPv4 and IPv6 forwarding, GRE, IPsec, VRRP, WCCP, PBR, BGP (version 4), OSPF.> Cloud Intelligence: Real-time updates on the best performing path to reach hundreds of Software-as-a-Service (SaaS) applications, ensuring users connect to those applications in the fastest, most intelligent way available. Additionally, automated daily updates of the application IP address database to EdgeConnect appliances keep pace with SaaS and web address changes.

- **Zone-based Firewall**: Centrally visualize, define and orchestrate granular security policies and create secure end-to-end zones across any combination of users, application groups and virtual overlays, pushing configuration updates to sites in accordance with business intent. Using simple templates to create unique zones that enforce granular perimeter security policies across LAN- WAN-LAN and LAN-WAN-Data Center use cases.

- **Service Chaining**: EdgeConnect supports simplified service chaining, using a drag-and-drop interface, to enable enterprises to automate and accelerate the integration of security partners' advanced services, like Palo Alto Networks, Checkpoint, Fortinet, ForcePoint, Symantec, se- cure web gateways (e.g., Zscaler), and secure DNS (e.g., Infoblox) utilizing private secure encrypted IPSec tunnels.

- **High Availability**: The EdgeConnect HA cluster protects from hardware, software and transport failures. High Availability is achieved by providing fault tolerance on both the network side (WAN) and on the equipment side. The EdgeConnect appliances are inter-connected with a HA link that allows tunnels over each underlay to connect to both appliances.

## MANAGED SERVICE

The solution is delivered as a Fully Managed Service that focuses on minimizing interruption operation by resolving issues as they arise. This is monitored and supported through JT's 24/7*365 Service Operations Centre.

**To find out more contact us at:**

T **UK/Int:** +44 20 7920 2000
E sales.jtge@jtglobal.com
W www.jtglobalenterprise.co.uk

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