

SD-WAN: CUSTOMIZED MANAGED SERVICES

T · · Systems ·

Let's power
higher performance

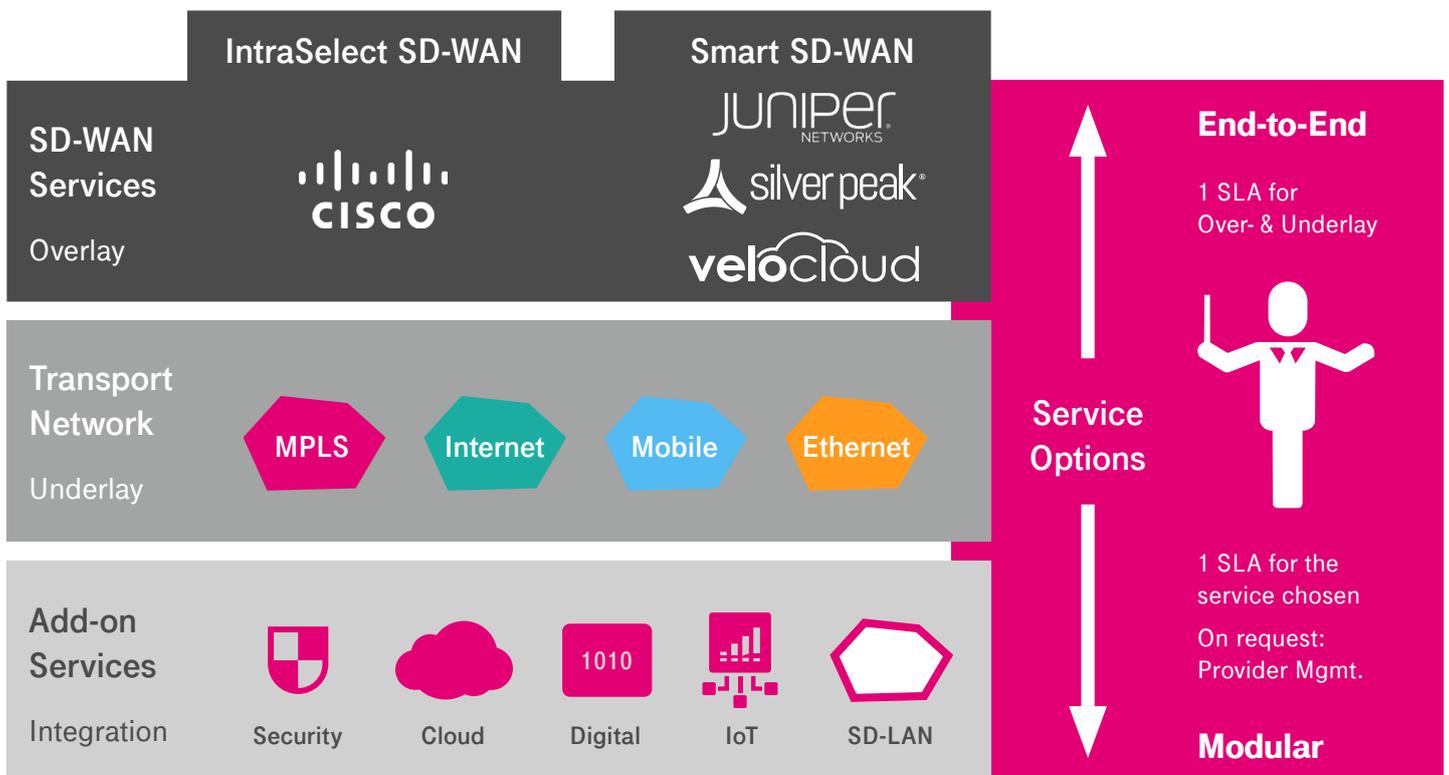
THE AGILE NETWORK

TWO SD-WAN OPERATING MODELS

As demand for bandwidth skyrockets and data processing in the cloud continues to grow, the likelihood of being hit by a cyberattack is increasing dramatically. Digitization poses more and more complex challenges for corporate networks. Using conventional wide area networks to deal with them is becoming steadily more difficult because each change takes time aplenty. But not with a software-defined WAN (SD-WAN) that relies on software for network control and for key network functions like firewalls. The advantage of SD-WAN is that its virtual overlay enables companies to monitor and adapt the network centrally, to connect clouds more simply and to route data flows smartly across hybrid networks. After years of development and pilot projects this agile network is now ready for use.

One of the first decisions an enterprise must make on the way to an SD-WAN is on which operating model is best for the company. Should it entrust network operation in its entirety and all its complexity to a service provider? Or should it prefer to be as flexible as possible in its choice of network services and technologies? That is why T-Systems has developed an SD-WAN portfolio that offers the right operating model for every company:

- **IntraSelect SD-WAN:** T-Systems operates the SD-WAN and the MPLS-based transport network from a single source – including service level agreements for the entire network.
- **Smart SD-WAN:** T-Systems operates the SD-WAN overlay – irrespective of the underlying transport network and its provider.



The T-Systems SD-WAN portfolio offers an integrated service for SD-WAN and the transport network or a Managed SD-WAN overlay on its own.

KEY BENEFITS OF AN SD-WAN

- **Variable:** A software-defined network can be adapted swiftly and simply.
- **High performance:** Subject to network load and application, an SD-WAN selects the optimal connection for all data streams: MPLS or Internet.
- **Securely into the cloud:** SD-WAN enables a secure local connection with public clouds because local Internet access points can be monitored and configured centrally.
- **Homogeneous:** SD-WAN provides a homogeneous overlay across complex transport networks. In addition, key network functions run for the first time on standard hardware on-site or in the cloud.

INTRASELECT SD-WAN

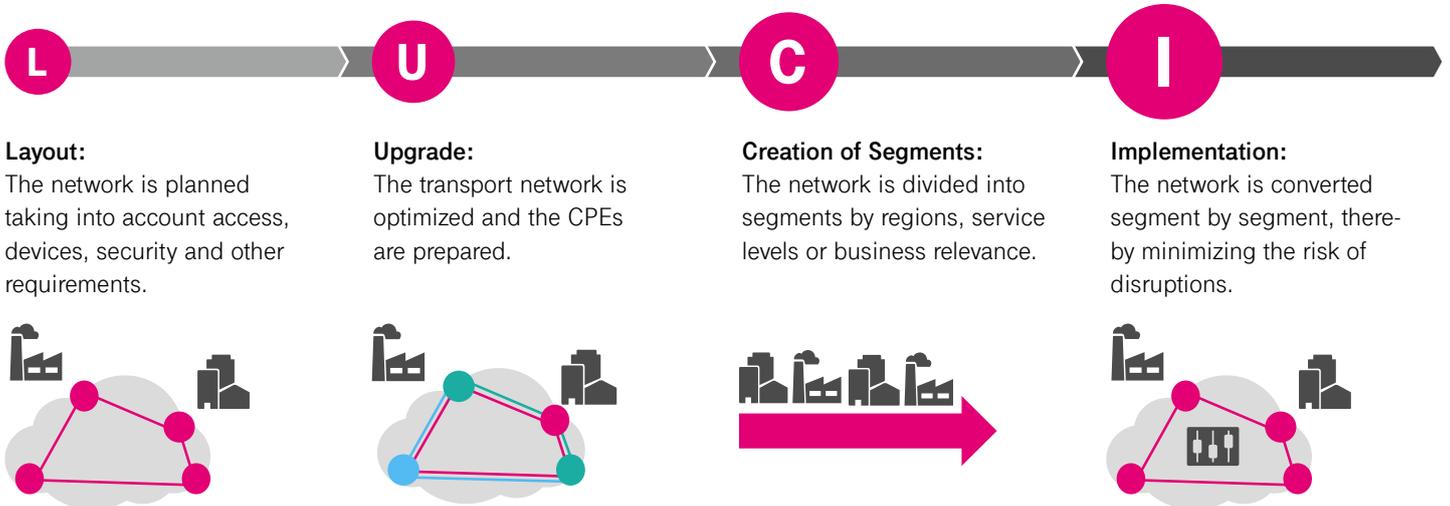
MANAGED SD-WAN AND SINGLE-SOURCE MPLS-VPN

T-Systems offers companies an integrated SD-WAN and an MPLS-based VPN from a single source, handling the operation of both network levels around the clock. That includes coordinating the SD-WAN and the transport network, including joint ITIL operating processes. This task is performed by a team of certified experts. Service level agreements (SLAs) define the corporate network's performance quality end to end—across overlay and underlay. IntraSelect SD-WAN uses Cisco's tested SD-WAN technology. The managed underlay is based on T-Systems' IntraSelect Fixed Connect service and consists of MPLS, Internet, Ethernet and mobile connections.

SECURITY MADE IN GERMANY

The offering fulfills the most exacting security and data protection requirements. Its central management components in the Open Telekom Cloud comply with Germany's stringent data protection guidelines. In addition, the service is operated entirely by Deutsche Telekom, which ensures a uniform view on security. All components have successfully passed Telekom's Privacy and Security Assessment (PSA) test.

T-Systems migrates the existing corporate network to SD-WAN using its tried and tested LUCI model. It aims to deliver a long-term network design and maximum network stability. A gateway between the new WAN and the old WAN links migrated locations and sites without an SD-WAN connection.



T-Systems implements SD-WAN migration in four steps.

THE BENEFITS AT A GLANCE

- **End-to-end SLAs:** As the SD-WAN and IP-VPN are from a single source T-Systems can ensure quality of service for the entire network.
- **All-inclusive service:** T-Systems provides advice and support for the design, migration and operation of the network.
- **High network security:** T-Systems assumes overall responsibility for the network and its security and runs the SD-WAN at German data centers in compliance with data protection requirements.
- **Perfect for large enterprises:** IntraSelect SD-WAN supports bandwidths of up to 100 Gbit/s, connecting thousands of sites and complex network designs.
- **Less hardware:** A single WAN access device (Universal CPE) combines, say, an SD-WAN and a VPN connection along with functions such as firewalls and WAN acceleration.
- **Tested SD-WAN functions:** T-Systems tests each SD-WAN function comprehensively and is constantly developing the offering further. The functions include smart routing via hybrid networks and secure cloud connectivity via local Internet gateways.

SMART SD-WAN

MODULAR OVERLAY SOLUTIONS FOR EVERY VPN

Using Smart SD-WAN, companies can convert their existing WAN quite easily into a virtual network without needing to switch network provider. The service offers an SD-WAN overlay that can be combined with the transport networks of all operators. So companies retain full global flexibility in their choice of network providers and access technologies for the corporate network. Smart SD-WAN is perfect for companies that choose to rely on a multi-carrier strategy or prefer to grow their existing networks gently rather than to restructure them radically.

THE RIGHT SD-WAN TECHNOLOGY FOR EVERY NETWORK

To meet their specific requirements companies can choose from an extensive portfolio of SD-WAN solutions from leading technology providers. T-Systems collaborates only with tested partners like Juniper, Silver Peak and VeloCloud. Specialists help companies to choose the right solution for their IT strategy. Certified consultants also offer assistance with migration. Internationally operating run the software-defined network around the clock. Companies can keep an eye on the network at all times via a dashboard.

THE BENEFITS AT A GLANCE

- **Large choice:** Companies are free to choose the network operators and technologies for their underlay. A range of SD-WAN technologies is also available.
- **Leading SD-WAN technologies:** T-Systems has tested all available partner technologies for sustainability, quality, security and scalability.
- **24/7 operation:** On request T-Systems will run the entire SD-WAN overlay operation around the clock.
- **Perfect for large enterprises:** Smart SD-WAN is also suitable for large, complex networks with hundreds of locations and bandwidths of more than 1 Gbit/s. The service is available internationally.

THREE OF THE SD-WAN PARTNER TECHNOLOGIES TESTED



Juniper's SD-WAN solution integrates routers and security in a single virtual network function (VNF) and can thereby offer the least expensive solution with the highest data rate in the industry. The solution supports VNFs from both Juniper and third-party providers. With a single tool all network functions can be managed across their entire life cycle. The solution also includes virtualized CPE devices for company locations. They forward data packets dynamically via several network connections in order to fulfill the transmission quality specified by the user for the application in question.



Silver Peak, one of the global SD-WAN leaders, offers networking software that enables enterprises to build a modern WAN that drives maximum value from cloud and digital transformation investments. The Unity EdgeConnect™ SD-WAN edge platform delivers a self-driving wide area network that continuously learns and adapts to the needs of the business to deliver the highest quality of experience to enterprise users and IT organizations. The EdgeConnect platform replaces routers, unifying SD-WAN, firewall, segmentation, routing, WAN optimization and application visibility and control in a single centrally managed platform. Thousands of global enterprises have deployed Silver Peak WAN solutions across more than 100 countries worldwide.



As a part of VMware, EMC and Dell, the VeloCloud SD-WAN is a winner in both computer hardware and virtualization. A global network of service gateways facilitates secure high-performance data connections with leading cloud providers. To improve performance, data streams can also be distributed dynamically via several WAN connections.

“ PERFECT FOR COMPANIES THAT RELY ON A MULTI-CARRIER STRATEGY OR AIM TO GROW THEIR EXISTING NETWORKS GENTLY RATHER THAN RESTRUCTURE THEM RADICALLY. ”

SD-WAN IN PRACTICE

SIEMENS

GIGABIT-SD-WAN FOR INDUSTRY

“The Internet is the new corporate network” is the maxim of Siemens IT. Already 60 percent of data traffic in the Siemens WAN is Internet traffic. This is because the leading international technology group is forging ahead at full speed with its digital transformation and increasingly uses applications from the cloud. That presupposes a high-performance network which is secure and easy to manage.

T-Systems IntraSelect SD-WAN enables Siemens to reduce the complexity of its network significantly. T-Systems operates the transport network and the SD-WAN, and Siemens keeps a round-the-clock eye on the network via a self-service console. Network security also benefits from this new transparency, while the new network provides wider bandwidths. In 2019 access reached 20 Gbit/s; in 2020 it is already 100 Gbit/s. In addition it incorporates modern functions such as Application Performance Management and Application Aware Networking. Migration is undertaken jointly with the technology partner by means of the LUCI model. The result is an agile network that adjusts to new business requirements and is easy to manage.

PRINZHORN | *We will.*
GROUP

SYMBIOSIS OF SD-WAN AND HYBRID NETWORK

You can't digitize without a network. For years the Austrian packaging specialist Prinzhorn has noticed that data traffic in its WAN is increasing, and with it the cost of operating the network. As in many conventional networks the company routes its Internet traffic via a central gateway. That is an additional burden on the WAN, but safeguarding local Internet access points is expensive and error-prone—especially when, like Prinzhorn, you have sites in 15 countries. That is why the company now relies on Smart SD-WAN from T-Systems.

Via the joint solution with Silver Peak local Internet routers and firewalls can be monitored and configured centrally. So consistent security policies are swiftly implemented. Internet data is no longer required, performance increases and costs decrease. Furthermore, T-Systems implements the SD-WAN for Prinzhorn along with the cloud strategy. Paper mills that are far away from data centers and gigabit connections use for applications like the enterprise resource planning (ERP) system a combination of private cloud and edge computing. The highlight of this process is that the ERP system, the SD-WAN and other functions run on a single device.

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