

IP VPN

COMMITTED TO QUALITY



T · · Systems ·

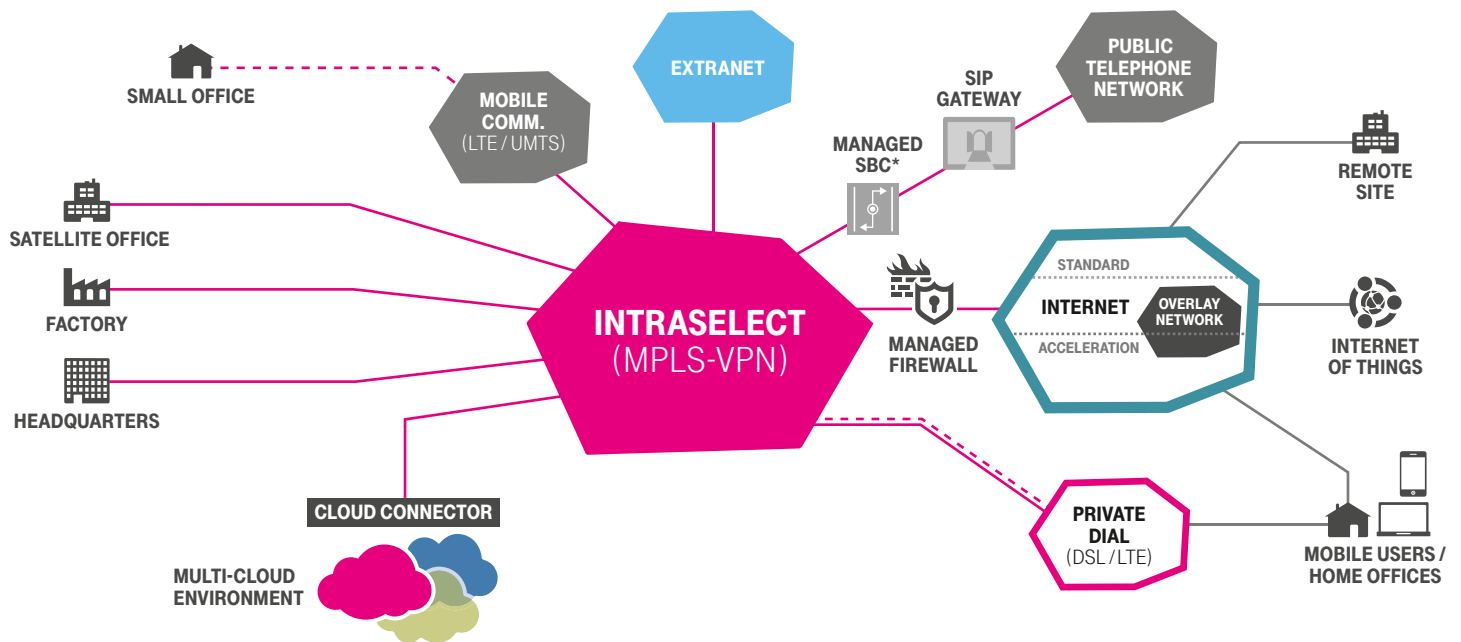
INTRASELECT

THE RIGHT SERVICE FOR ALL AND ANY REQUIREMENTS

CONNECTIVITY TAILORED TO YOUR BUSINESS

Businesses face an array of connectivity challenges. They need high bandwidth and robust security. They must support around-the-clock, around-the-world operations, the Internet of Things, hybrid clouds – and much more. This calls for innovative network services and a variety of carrier technologies. T Systems provides just that – leveraging its modular offering to build secure, high-performance infrastructures with excellent transmission quality. The IntraSelect solution described below is a managed, MPLS-based VPN that delivers outstanding network reliability and cost-effectiveness.

IntraSelect connects geographically dispersed sites, satellite offices and mobile workers. It enables traffic prioritization for key applications, and provides secure access to centralized software and cloud services. T-Systems offers a choice of access options with scalable bandwidths via fixed (Fixed Connect) and mobile connections (Remote Connect). Further, modular IP VPN services streamline voice and data traffic, accelerate applications within WANs, and significantly increase transmission speed for VPN tunnels across the Internet.



* Session Border Controller

INTRASELECT FIXED CONNECT

Fixed Connect access options provide high-performance connections between national and international sites and the MPLS platform – with the technology that best matches customer requirements, and flexible, scalable bandwidths:

- **Fixed Connect Ethernet:** Access based on Ethernet technology, up to 10 GBit/s
- **Fixed Connect Premium DSL:** High-quality DSL access with class-of-service option, up to 100 MBit/s*
- **Fixed Connect DSL:** Internet-based DSL access with IPsec encryption, up to 100 MBit/s*
- **Fixed Connect Mobile:** Access via cellphone network (UMTS / LTE), up to 20 MBit/s

* depending on local provider

FEATURES

Eight classes of service (CoS): Applications are assigned defined classes of service, with traffic prioritized according to need (delay, jitter, packet loss). Up to three CoS classes can be allocated to mission-critical applications. Agreed minimum bandwidths ensure that network overloads do not impact other classes. Implementation of the voice signaling class ensures reliable, high-quality VoIP.

Multi-VPN: A multi-VPN enables the logical segregation of communications for multiple organizational units, applications, or customers within a multi-tenant data center.

Traffic offloading: In practice, bandwidth reserved for backup purposes is often unused and can be exploited as a permanent secondary path for non-critical applications. There is then more bandwidth available on the primary path for time-sensitive applications (e.g. VoIP and ERP). This can eliminate the need for network upgrades, drive down costs, and improve transmission performance.

Advanced reporting: Threshold reporting identifies times when pre-defined bandwidth thresholds are exceeded for each connection and for each VPN at the router. Forecast reporting predicts when the usable bandwidth for each connection will no longer be sufficient to meet requirements.

WAN acceleration: This service can accelerate the performance of connections for individual sites, data centers, cloud services and mobile users by up to 50-fold. WAN round-trip delay can be slashed by up to 98 percent, required bandwidth by up to 95 percent. WAN acceleration is available as a managed service, with no capital investment required by the customer.

Extranet solutions: An extranet enables efficient, secure exchange of sensitive data across organizational boundaries. Suppliers, distributors and partners can be integrated via industry-specific networks. Certified European Network Exchange (ENX) providers implement excellent standards of quality and security.

INTRASELECT REMOTE CONNECT

IntraSelect Remote Connect allows the secure, reliable integration of small and satellite offices, teleworkers and mobile professionals into the corporate network. Access is based on a variety of technologies:

- **DSL** (up to 51.3 MBit/s)
- **UMTS / LTE** (up to 300 MBit/s)
- **ISDN** (until 2018)
- **Internet** with IPsec encryption; speeds depend on provider (bandwidth depends on Internet access option)

MOBILE CONNECT: FOR MOBILE EMPLOYEES

Secure Client: An IPsec-encrypted Internet connection to the MPLS platform is established via a VPN software client. This is possible for all mobile devices, including smartphones and tablets. SSL encryption is optionally available for laptop / notebook computers.

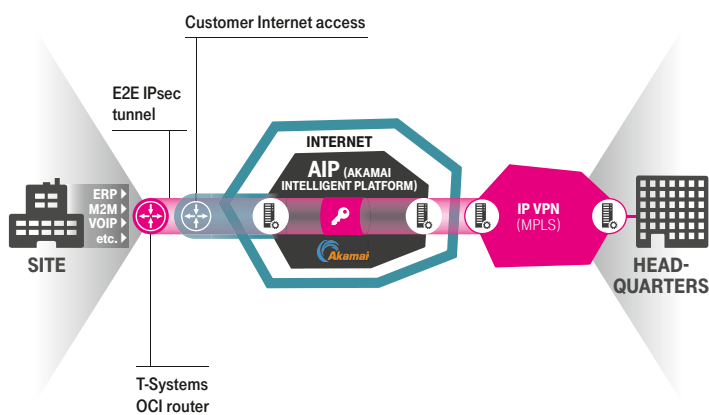
Secure Internet Dial: An (IPsec or SSL) encrypted Internet connection from a laptop or notebook to the MPLS platform is established via a VPN software client and dialer software. Dial-in, with user authentication, is possible via xDSL, a hotspot or a dedicated access number (ISDN, until 2018).

Private Dial: A connection between a laptop or notebook and the MPLS platform is established via a software client over T-Systems' Remote Connect platform. This solution is only available in Germany and requires a Deutsche Telekom DSL / mobile or ISDN (until 2018) connection.

OFFICE CONNECT: CONNECTIVITY FOR SATELLITE AND HOME OFFICES

Office Connect Internet (OCI): A connection to the MPLS platform is established over the Internet via IPsec encryption. The user must have an Internet connection.

New: Office Connect Internet Acceleration: T-Systems and Akamai developed Office Connect Internet Acceleration to overcome the problem of inconsistent transmission quality over the Internet. An IPsec connection routes voice and data traffic via the Internet to the MPLS platform by means of Akamai's high-performance overlay network. Reduced round-trip delay and substantially lower packet losses speed up Internet traffic – a significant benefit for intercontinental connections.



Akamai's high-performance overlay network accelerates Internet connections to the MPLS platform via IPsec encryption

How you benefit

- Improved Internet performance with QoS mechanisms
- High data throughput thanks to significantly fewer packet losses and lower data-transfer latency
- Substantial quality improvements, especially for long-distance and intercontinental connections
- Acceleration of all applications, not only http / https

Usage scenarios

- When higher-quality data transfer via the Internet is imperative
- For all sites and offices where MPLS-based connectivity is unavailable
- For cost-efficiency: monthly OCI costs plus 15 percent
- For rapid integration of new sites

Office Connect Private: This solution provides secure connections to the MPLS platform for teleworkers and satellite offices. Connections are routed via a private T-Systems Remote Connect platform. However, Office Connect Private is only available in Germany, and requires Deutsche Telekom ISDN or DSL connections.

IP VPN FROM T-SYSTEMS

COST-EFFECTIVENESS AND FLEXIBILITY

- Unrivalled price / performance ratio
- All-inclusive per-port pricing for a broad range of communications services
- Rapid implementation
- Services can be scaled up and down as needed

SECURITY AND COMPLIANCE

- Security by design
- Robust data protection to German standards
- ISO / IEC certification

PERFORMANCE AND NETWORK QUALITY

- Defined service classes and parameters
- Technical service levels
- Performance reporting and trend analysis

HYBRID TECHNOLOGY

- Hybrid network platform (MPLS, Layer-2 services, Internet, mobile)
- IPv4 / IPv6 dual stack
- Voice / WAN integration

GUARANTEED QUALITY

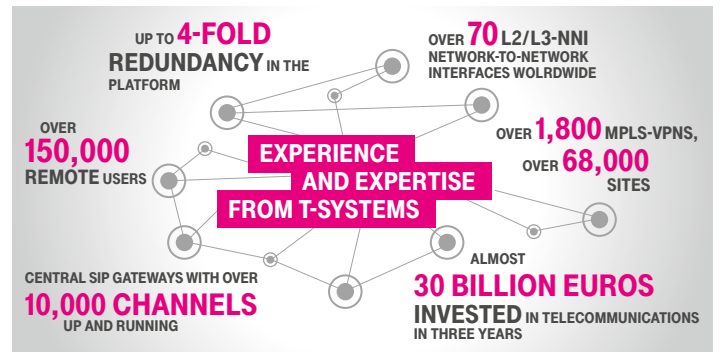
- Up to 99.99 percent availability
- Guaranteed performance parameters: round-trip delay, jitter, packet loss
- Guaranteed time-to-implementation
- 24x7 services and a dedicated service manager
- End-to-end services for all components operated by T-Systems

GLOBAL AVAILABILITY

- Centralized applications made available worldwide
- Single point of contact
- Short local loop

MODULAR ADD-ON-SERVICES

- Unified communications
- Security
- IT services
- SIP gateways / VoIP
- Video
- Managed LAN / WAN services
- Managed layer-1 / layer-2 services



REFERENCES

BRENTAG: A leading international distributor of industrial and specialty chemicals, Brenntag standardized and consolidated its entire ICT platform to support its Asian expansion plans. T Systems' end-to-end solution combines IP VPN and Application Operations for SAP® Solutions.



SCHLESWIG-HOLSTEIN: Germany's northernmost federal state replaced five independent communications networks with a single, consolidated voice and data network, implementing voice-over-IP for 700 sites. An MPLS voice and data network from T-Systems now serves more than 80 government agencies with a total of 320 offices.



TRUMPF: A world leader in machine tools and industrial lasers, Trumpf collaborated with T-Systems to create a future-proof, global, high-availability corporate network. This MPLS platform, with redundancy of all critical components, provides international site connectivity.



FURTHER INFORMATION

<https://networks.t-systems.com>

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