

Carrier Intranet Service.

Technical product sheet.

Deutsche Telekom's Wholesale IP VPN offering - Carrier Intranet Service.

International Carrier Sales and Solutions (ICSS), one of the leading worldwide service providers, offers customized solutions and network management to international clients. Our wholesale IP VPN solutions combine state-of-the-art technology with good quality of service.

Based on the IP MPLS (Multi Protocol Label Switching) backbone of Deutsche Telekom AG, we connect customers' locations across the globe while furnishing round-the-clock monitoring and maintenance and therefore ensuring security and reliability.

Solution overview.

Carrier Intranet Service connects different end-customer locations (WAN/VPN service including classes of service). The traffic of the VPN end points is sent to the carrier via an interconnection between Deutsche Telekom's MPLS network and the carrier's MPLS network.

Carrier Intranet Service bundles the following elements:

- The IP Infrastructure includes access, the logical connections (VPNs) within the Deutsche Telekom backbone, and the customer edge equipment (CE). The latter is available upon request.
- The service functions consist of any-to-any IP connections between the service access points and service interfaces within each of the customer VPNs. The class-of-service (CoS) functions enable the VPN traffic to be mapped to up to 4 traffic classes based on varying quality-of-service requirements. The standard 24/7 support level and the service levels are also included. These levels are provided by the Deutsche Telekom service management, which also guarantees the service level agreement (SLA).

Deutsche Telekom is responsible for the delivery, operation, and maintenance of the contractually agreed services. They are operationally provided to the customers at the service access points (SAP).

Carrier Intranet Service Gateway (NNI).

Deutsche Telekom's Carrier Intranet Service allows carrier customers to set up interconnection with Deutsche Telekom's MPLS platform according to the RFC 4364 Section 10a specifications. Serial point-to-point and Ethernet connections can be implemented for the Layer2 protocol across the gateway. Bandwidths available for interconnection include E1/T1, E3/T3, STM-1, STM-4, STM-16, FastEthernet, or GigabitEthernet ports.

Interconnection access options are:

- a) Port only
- b) Port and in-house cabling (direct or in meet-me room)
- c) Port and local loop

Unmanaged Customer Edge Equipment (CE) service.

A preconfigured CE service provides the customer with a self-manageable private WAN transport solution combined with a differentiated quality of service (QoS). The service has the following attributes:

- **Any-to-any connectivity within a customer's VPN:** sites within the VPN are provided with connectivity to all other customer sites on the same VPN without the need for dedicated point-to-point connections or the need to route through a hub location. Connectivity between different VPNs that use the core networks is strictly denied by the service.
- **CoS transparency:** the IP precedence values used by the carrier for classifying end-customer traffic are not overwritten by Deutsche Telekom, which means that the carrier can implement the same CoS service for the end customer as it offers in its own network.
- **Support for any customer IP addressing:** since a specific customer's routing information is only known within the context of the customer's VPN, any IP addressing plan may be used under certain conditions.
- **Ease of use:** connecting to Deutsche Telekom's MPLS network is easy. Unmanaged CE service offers both static routing and BGP4 as the routing protocols between the PE and CE routers. Customers do not need MPLS functionality on their equipment to use the Carrier Intranet Service offering.
- **Customer Edge (CE) router,** including a basic connectivity configuration and hardware maintenance based on Deutsche Telekom standards. The carrier remains responsible for the management of the CE router throughout the operation of the VPN.

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The Carrier Intranet Service product is available in three options:

- a) Port-only service on Deutsche Telekom's IP PoP
- b) Port and in-house wiring in the telehouse
- c) Port and local access to the customer location.

Geographical service coverage.

Deutsche Telekom's Carrier Intranet Service is provided on Deutsche Telekom's own global MPLS platform with more than 150 PoPs. Extended reach via partner carriers' MPLS networks to regions where Deutsche Telekom has no coverage is also available.

Service levels.

Deutsche Telekom's Carrier Intranet Service offers two service levels:

- Compact Service Level.
- Comfort Service Level.

Service levels differ in the committed time to restore values. Both the Compact and Comfort Service Levels include the hardware fault clearance of the CE router provided that the carrier ordered the router delivery and maintenance from Deutsche Telekom.

Service level agreement.

All service levels are covered by a SLA with the following commitments:

- Ready-for-service date per service access point.
- Availability.
- Network performance parameters (latency, jitter, packet loss).
- Mean time to restore.

Performance commitment values have been set up according to the various classes of service available (premium, multimedia, and voice). These are valid for PoP-to-PoP measurement.

Access.

Depending on the physical medium in the VPN end-point access area, different committed access rates can be implemented. The bandwidths available for the Carrier Intranet Service vary from E1/T1 and its subrates, E3/T3 and its subrates, and STM-1, STM-4, STM-16 and FE or GE. ADSL and SDSL access bandwidths are also available, as well as different redundancy implementations to cover customer availability requirements.

About Deutsche Telekom ICSS.

ICSS, the international wholesale arm of Deutsche Telekom Group, is one of the biggest voice carriers worldwide and an increasingly important IP player across a growing European market with excellent interregional connections between Europe, the Americas and Asia. With continuously changing markets, ICSS has redesigned its portfolio from traditional voice and transport services to advanced innovative wholesale services and customized IP solutions. The business activities and efforts of ICSS focus on serving the following market segments: broadband operators (ISPs, WISPs, and VoIP SPs), mobile operators and MVNOs, content, application and media providers, corporate service providers and VNOs, fixed voice carriers, and carriers' carriers and their customers through a worldwide sales network. The basis for the delivery of the services of ICSS is an expanding ultramodern infrastructure – Deutsche Telekom's international network.

For further information, see

www.deutschetelekom.com/icss

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