

IPLC

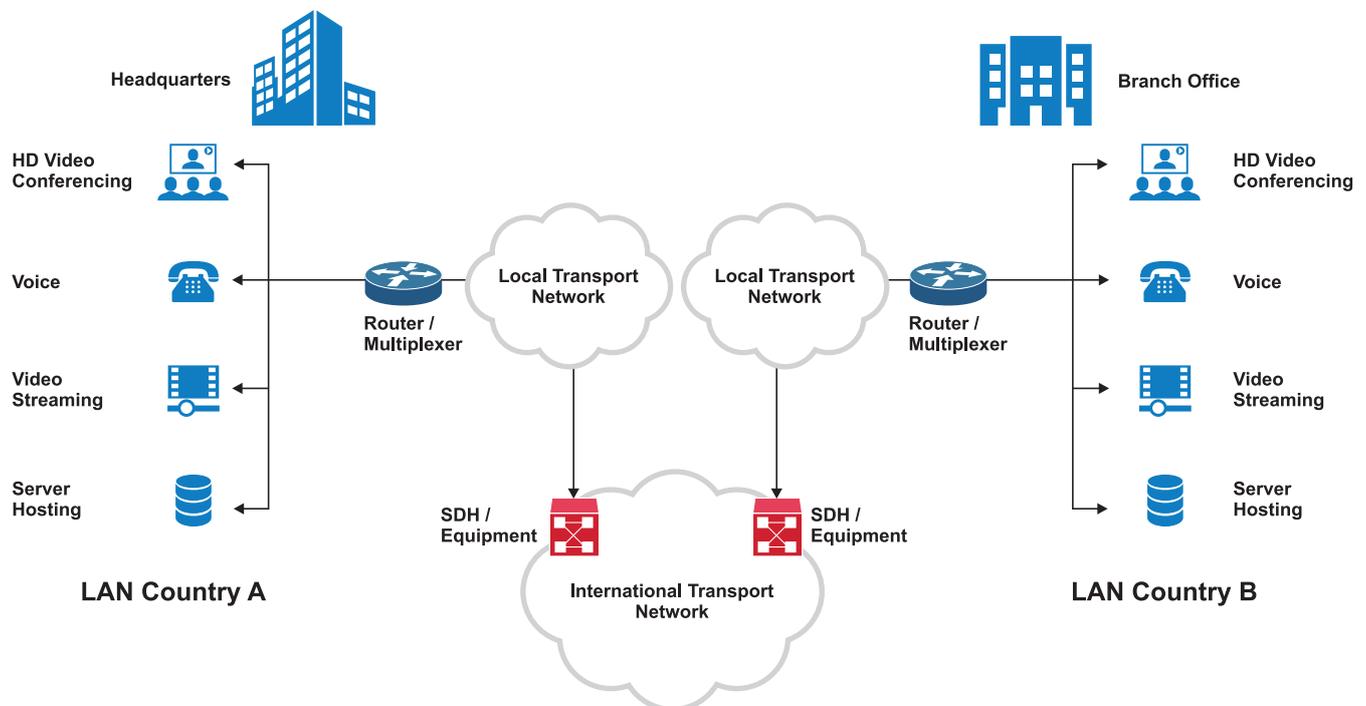


TRANSWORLD IPLC

Supported by our technically advanced core network and peering relationships with Tier 1 bandwidth providers across the globe, Transworld IPLC service provides clear channel bandwidth for global communications. It is a dedicated point-to-point bandwidth solution that can carry voice, data, internet or video traffic to virtually any place in the world. It enables an organization to communicate with its POPs, offices, partners and customers who are geographically dispersed throughout the world with the maximum security and the minimum delays. IPLC users can securely transmit and receive large volumes of data at high data rates and high speeds and face no traffic congestions due to dedicated circuits. IPLC can be used for voice traffic, internet access, business data exchange, video conferencing and any other form of communications.

TWA gives you the advantage of one-window operations and provides end to end connectivity as a single source. With Transworld, the hassle of liaison with multiple parties, communication and time issues are all eliminated due to our One Stop Shop model. Our partnerships with multiple cable operators help us bring you the benefits of ease, timeliness and effective solutions with just one contact point. Our IPLC service offers impeccable point-to-point connectivity to LDIs, ISPs, multinationals and international agencies in Pakistan and around the world.

GENERIC IPLC NETWORK DESIGN



IPLC services are further augmented by EoSDH to provide greater bandwidth flexibility to meet divergent customer demands over Ethernet interface.

Another variant of IPLC is International MPLS.

FEATURES

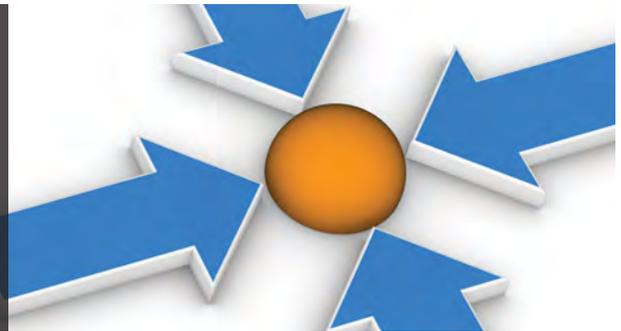
DEDICATED CONNECTIVITY

Because you own the whole circuit, you don't have to worry about bandwidth issues such as privacy and congestion.



ONE STOP SHOP

Transworld has partnerships and NNI arrangements with Tier-1 carriers around the globe and thus we provide end-to-end connectivity through full circuits so that you don't have to shop around for the other half.



HIGHLY SECURE

Very secure connection so that you don't have to worry about any data misuse or loss.



FULLY RESTORABLE

Choose from multiple restorable options with full bandwidth switchover to a backup cable system in case of failure, according to your budget.



PROACTIVE CUSTOMER SUPPORT

Our dedicated customer services professionals at our dedicated Customer Services Call Centre monitor our network on a 24x7 basis so that we detect problems before you report them.



TRANSWORLD EoSDH

SERVICE DESCRIPTION

Ethernet technology is a well known technology that has been deployed for decades to provide LAN (Local Area Network) services. Due to the lower pricing of Ethernet interfaces compared to the traditional SDH and PDH technologies, Ethernet has become very important in today's global network.

Ethernet technology has the following applications and advantages:

- Suitable for transport of IP traffic
- Provides easy interconnection between networks
- Point to point services
- Aggregation and point to multipoint services
- Traffic differentiation
- Network segmentation with VLAN's
- Network security by dedicated link or virtual networks

TRANSWORLD EoSDH SERVICE

In Transworld's Ethernet over SDH network architecture, the existing SDH infrastructure is used to transport high-speed Ethernet connections. The main advantage of this approach is the high level of reliability, achieved through the use of the native SDH protection mechanisms, which present a typical recovery time of 50 ms for severe failures.

The advantages of using SDH are end-to-end network management, full diagnostic capability, fault monitoring and statistical performance reporting.

FEATURES

01

PHYSICAL INTERFACES

With Transworld's EoSDH IPLC service, as standard, Partner Operators can choose a wide range of different International bandwidth capacities varying from N x 2 Mbps up to Gigabit based either on Synchronous Digital Hierarchy (SDH) and Dense Wavelength Division Multiplexing (DWDM) enabling optical transport of bandwidth.

The following types of Physical ports are available to access Transworld's service:

- Fast Ethernet
- Gigabit Ethernet

Other access methods can be provided on a case to case basis.

02

TRAFFIC DIFFERENTIATION (QOS)

Transworld offers three types of traffic classes giving the customer the possibility to prioritize specific traffic flows from other traffic less important.

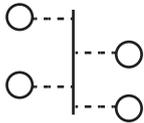
- Bronze: This is reserved for best effort or low priority traffic that tolerates larger delay.
- Silver: It is reserved for medium priority traffic.
- Gold: It is reserved for high priority traffic with low tolerance to delay and packet lost.

Transworld can provide a QoS design suggestion so the customer can get the best performance and functionality out of its network.

03

NETWORK REDUNDANCY

Ethernet traffic is carried over SDH infrastructure which is fully redundant.

Topology	Services	Standard	Ethernet Services
	Private Line	Mef	E-Line
		ITU-T (G.8011)	EPL
		IETF	VPWS
	Virtual Private Line	MEF	E-Line
		ITU-T (G.8011)	EVPL
		IETF	VPWS
	Private LAN	MEF	E-LAN
		ITU-T (G.8011)	EPLAN
		IETF	VPLS
	Virtual Private LAN	MEF	E-LAN
		ITU-T (G.8011)	EPLAN
		IETF	VPLS

04

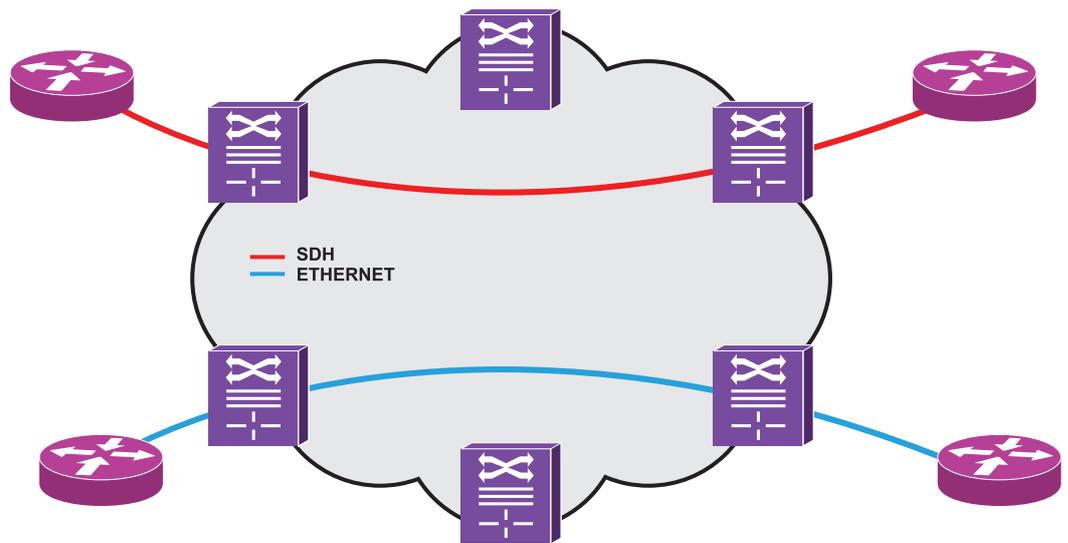
ETHERNET SERVICE

Transworld is able to provide the following type of services:

1. Point to Point

- Without VLAN segmentation
- With VLAN segmentation

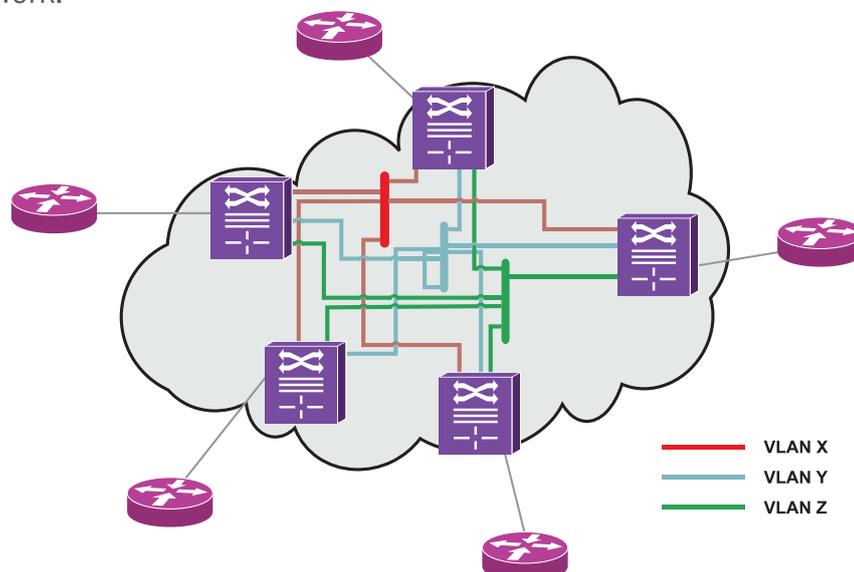
Point to point services provide the possibility of interconnecting two sites for Ethernet transport. The traffic can be segmented into several VLANs if this is required. There is also possibility for different types of traffic classification and prioritization. This solution gives the customer a total control over the quality and the security of the link.



2. Multi-Point to Multi-Point (LAN Services)

- Without VLAN segmentation
- With VLAN segmentation

Multipoint to multipoint service provides the customer the possibility of interconnecting several locations like they were in the same LAN. The traffic can be also segmented into several VLANs if required and different QoS can be applied to each VLAN or to specific traffic inside a VLAN. This service simulates a Layer 2 Network.



SERVICE **Benefits**

The main advantages of Ethernet-over-SDH are the ability to carry Ethernet traffic over long distances, handle traffic from many customers in common pipes and at the same time offer tailored, agreed service levels to each single customer. By combining the traffic from many smaller customers into common SDH pipe of tailored size, it is possible to connect customers all over the country without the need to deploy IP/MPLS edge routers at all central offices. This is achieved by adding Ethernet-over-SDH capabilities to the network nodes at PoP sites and then establishing central gateways to the core IP/MPLS network where necessary. In this way, both established and new service types can be offered.

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