



Comparison of Layer 1 and Ethernet Services

For a flexible, cost-effective alternative to legacy Layer 1 technology, Tata Communications offers Layer 2 Ethernet service around the globe. Designed to scale for the evolving bandwidth requirements of today's global enterprises, Ethernet delivers the following important benefits:

Scalable Data Bandwidth

Meet the growing demand for data services—with bandwidth granularity and greater affordability. Break free from inflexible Layer 1 slabs. With Tata Communications Ethernet service, easily scalable Ethernet bandwidth empowers users to purchase the exact amount of bandwidth required. Ethernet services also scale on the same port—without service interruption—to a full Fast Ethernet (100 Mbps) or Gigabit Ethernet (1000 Mbps) in granular increments as requirements grow. Enterprise users can choose virtually any bandwidth required to meet current business needs and when demand increases, bandwidth is added without disruptive service interruptions or additional ports.

Configuration Variety

Layer 1 service supports a simplistic point to point configuration, leaving no options for more sophisticated needs. Layer 2 Ethernet can use a point to point configuration, a point to multipoint (hub and spoke) configuration, and a multipoint (any to any) configuration. With the flexibility of Layer 2 Ethernet, customers can purchase the most appropriate configuration to achieve efficiencies not provided with Layer 1 and without the traffic-invasive nature of Layer 3 services.

Reduced Risk

With the flexibility to meet changing capacity on short notice, Ethernet users manage network changes more precisely, reducing the risk of forecast planning from a full year to as little as a month. Scalable service and flexible ports also ensure customers can add bandwidth without incurring costly, time-consuming contractual changes and without additional hardware.

Lower Total Cost of Ownership

Purchasing the exact bandwidth required reduces total cost of ownership. Instead of purchasing Layer 1 slabs that often result in unused bandwidth and wasted investment, Layer 2 Ethernet customers can order the exact bandwidth required, eliminating waste and reducing total costs.

Ethernet ports are the most prevalent type of telecom port in the world today and almost all transmission equipment has a standard Ethernet port. Unlike the considerable investment required for Layer 1 ports, Layer 2 Ethernet ports are often already in place or can be added at minimal cost.

In addition, the Ethernet standard is familiar to IT departments and consists of a well-known protocol. Protocol expertise often exists in IT departments so transitioning to Ethernet service does not require special expertise, which reduces personnel costs.

Monitoring Designed for Data

Unlike Layer 1 service, Layer 2 Ethernet is more appropriately designed to monitor and manage data performance measurements and provide a true picture of network performance to maintain quality of experience. Layer 1 SLAs only provide availability, a monitoring measurement that is roughly equivalent to a link being “up” or “down” with some ability to show degradation of service. With Layer 2 service, however, degradation can occur more often (referred to as flapping) and long before a Layer 1 service degradation even registers.

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Ethernet SLAs include measurements to ensure customer packets move across the network. Packet delivery ratio is the most important measurement because packets are carrying customer data. Layer 1 availability can be “up” while customers can still experience the excessive or periodic packet loss that results in an ineffective connection. In addition to packet delivery ratio, other SLA measurements can include service uptime, latency (round-trip frame delay), and jitter (one-way delay variation).

Recognized Expertise

Tata Communications was the first telecommunications provider in India to receive MEF-9 certification and the first global provider to receive MEF-9 and MEF-14 certification for global Ethernet services, indicating compliance with an international standard developed by the Metro Ethernet Forum (MEF), a global industry alliance of more than 120 organizations. Certification is awarded only after successfully passing over 400 tests performed by an independent agency over a five week period.

Comparison of Layer 1 and Ethernet Service		
Feature	Ethernet	Layer 1
Available bandwidth	Bandwidth available in very small increments lending itself to a “pay as you grow” model.	Fixed bandwidth slabs and inflexible ports.
Upgradability	Non-service affecting upgrades using the existing port.	Service affecting upgrades requiring additional, more expensive ports.
Certification	MEF-9, MEF-14.	N/A
Cash flow management	Small bandwidth increments, flexible ports, and non-service affecting upgrades allow customers to match bandwidth purchases to usage, eliminating unused, wasted bandwidth.	Larger, fixed bandwidth increments require users to take more bandwidth than needed. This bandwidth, while usually not leveraged, is more expensive up front and over time.
Monitoring capabilities	Data centric SLA measures service uptime, packet delivery ratio, latency, and jitter.	Voice-centric SLA measures availability only.

For More Information

For more information on how Ethernet services can positively impact your bottom line, please visit www.tatacommunications.com.

Did you know?

Customer feedback has demonstrated that 90 percent of Tata Communications customers use 50 percent – only half – of their Layer 1 bandwidth.

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